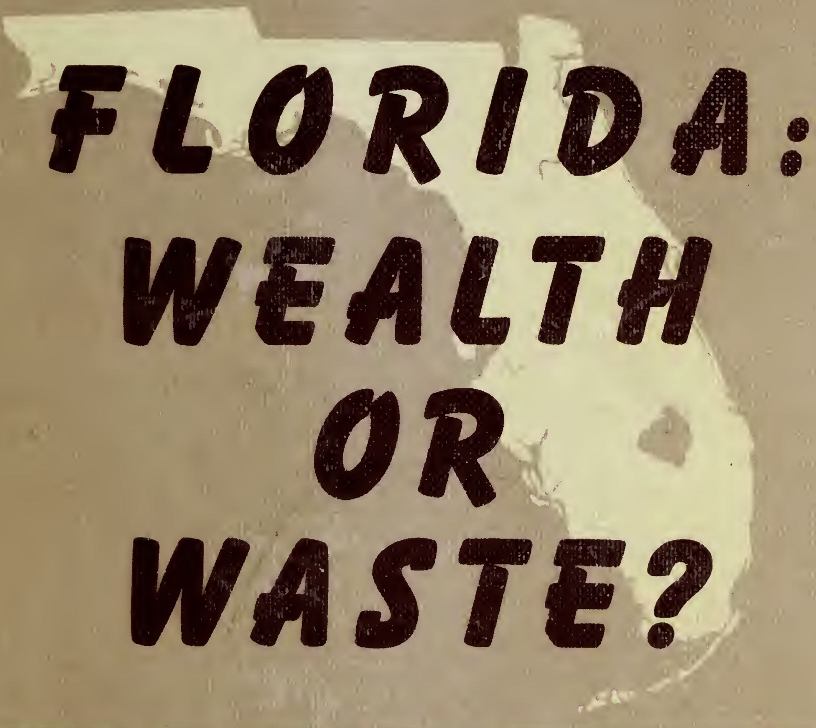

FLORIDA: WEALTH OR WASTE?

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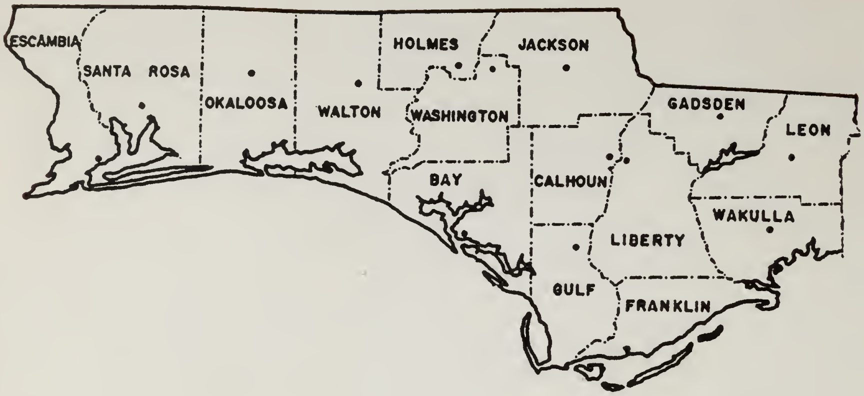
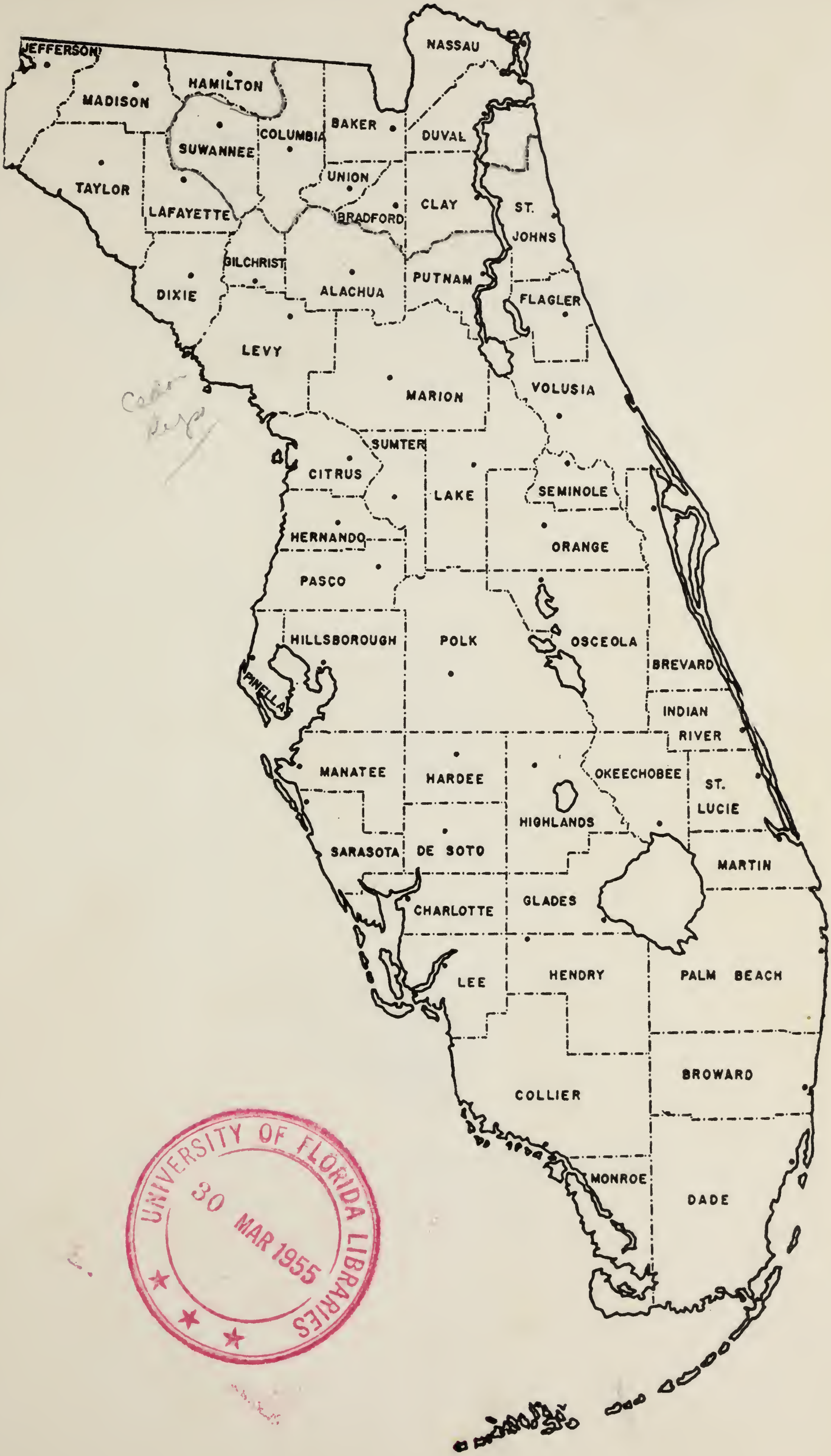


FLORIDA COUNTIES

DOTS (•) SHOW LOCATION OF COUNTY SEATS

ALACHUA, Gainesville
BAKER, Macclenny
BAY, Panama City
BRADFORD, Starke
BREVARD, Titusville
BROWARD, Fort Lauderdale
CALHOUN, Blountstown
CHARLOTTE, Punta Gorda
CITRUS, Inverness
CLAY, Green Cove Springs
COLLIER, Everglades
COLUMBIA, Lake City
DADE, Miami
DeSOTO, Arcadia
DIXIE, Cross City
DUVAL, Jacksonville
ESCAMBIA, Pensacola
FLAGLER, Bunnell
FRANKLIN, Apalachicola
GADSDEN, Quincy
GILCHRIST, Trenton
GLADES, Moorehaven
GULF, Wewahitchka
HAMILTON, Jasper
HARDEE, Wauchula
HENDRY, LaBelle
HERNANDO, Brooksville
HIGHLANDS, Sebring
HILLSBOROUGH, Tampa
HOLMES, Bonifay
INDIAN RIVER, Vero Beach
JACKSON, Marianna
JEFFERSON, Monticello
LAFAYETTE, Mayo
LAKE, Tavares
LEE, Fort Myers
LEON, Tallahassee
LEVY, Bronson
LIBERTY, Bristol
MADISON, Madison
MANATEE, Bradenton
MARION, Ocala
MARTIN, Stuart
MONROE, Key West
NASSAU, Fernandina
OKALOOSA, Crestview
OKEECHOBEE, Okeechobee
ORANGE, Orlando
OSCEOLA, Kissimmee
PALM BEACH, West Palm Beach
PASCO, Dade City
PINELLAS, Clearwater
POLK, Bartow
PUTNAM, Palatka
ST. JOHNS, St. Augustine
ST. LUCIE, Fort Pierce
SANTA ROSA, Milton
SARASOTA, Sarasota
SEMINOLE, Sanford
SUMTER, Bushnell
SUWANNEE, Live Oak
TAYLOR, Perry
UNION, Lake Butler
VOLUSIA, DeLand
WAKULLA, Crawfordville
WALTON, DeFuniak Springs
WASHINGTON, Chipley



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FLORIDA: WEALTH OR WASTE?

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FLORIDA STATE DEPARTMENT OF EDUCATION
THOMAS D. BAILEY, *Superintendent*
TALLAHASSEE, FLORIDA

University of Florida
1853

PREFACE

The first edition of this book, dated 1946, was produced as a cooperative venture sponsored by the Florida Resource Use Education Project (1944-1947). The primary objectives of that Project were to provide instructional materials dealing with the use of the human, natural, and social resources of Flarida, and to stimulate the inclusion of such materials in educational programs throughout the State. The State Department of Education, the State Planning Board, the University of Florida, Florida State University (then Florida State College for Women), and the Florida Agricultural and Mechanical University (then College) were co-sponsors of the Project; all of the institutions of higher learning in Florida cooperated.

The second edition has been sponsored by the Florida Resource-Use Education Committee, which in 1947 replaced the Advisory Committee to the Florida Resource-Use Education Project. It has been produced cooperatively by the State Department of Education and the Florida State University Department of Geography and School of Education.

This new edition is a complete revision of the earlier one. The many changes that have occurred in the State during the past decade made it essential to investigae anew all of the aspects of resource use, to rewrite all chapters, and to remake all tables, graphs, and maps based on statistical data. Cost of printing prevented the inclusion of many materials from the earlier edition. Hence it is suggested that both books be used to bring out comparisons and contrasts for the two periods of time.

In most cases figures quoted are from the United States Census of 1950. When available, later statistics from reliable sources were used.

The manuscript of this edition, like the first, was prepared by a group of public school teachers and principals under the direction of Henry F. Becker, Chairman of the Department of Geography at Florida State University. Members of this group include Hugh E. Allsworth (Dade), M. Luther King (Santa Rosa), Jean Matheson (Palm Beach), Jennie Spivey (Collier), Pieter van Dusen (Palm Beach), and Mrs. Mary Williams (Leon). Invaluable assistance was rendered by David E. Christensen, Geographer, R. Lemoyne Cash, Research Assistant in Geography, James L. Friend, Cartographer, and Richard C. Dynes, Graduate Assistant. Jack Fletcher of Pinellas County has worked on the project as a consultant and otherwise has given helpful support to the venture. Deputy Superintendent J. K. Chapman, and T. George Walker, Director, Division of Publications and Textbook Services, both of the State Department of Education, have provided technical direction and editorial services in readying the manuscript for publication.

Many other persons and agencies have been generous in their editorial assistance and in furnishing illustrative material. Particular mention should be made of the following state agencies: Advertising Commission, Department of Agriculture, Board of Conservation, Forest Service, Game and Fresh Water Fish Commission, Geological Survey, Board of Health, Park Service, and Road Department. Similar acknowledgment is due to the Soil Conservation Service and the Extension Service of the United States Department of Agriculture.

Credit is due for pictures as follows: Agricultural Extension Division (Figure 72E); DeLand Chamber of Commerce (Figure 102); Florida Department of Agriculture (Figures 69B, 73B); Florida Citrus Commission (Figure 60A); Florida Forest Service (Figures 2A, 2B, 45A, 47A, 47B, 47C, 48A, 50, 51); Florida Park Service (Figures 151A, 151B, 151C); Florida State News Bureau (Figures 11A, 11B, 11C, 56B, 65D, 67, 68D, 69A, 69C, 75B, 78A, 78B, 78C, 79C, 81, 98B, 110A, 110B, 111A, 116, 120, 121, 129A, 129B, 145E, 151D); Duane Perkins (Figure 103); Geography Department, Florida State University (Figures 65B, 65C, 68B, 68C, 72A, 113, 145A, 145B, 145C, 145D); Miami Herald (Figures 90, 91A, 91C); Orlando Housing Authority (Figures 149A, 149B); Miami Beach News Bureau (Figure 98A); U. S. Forest Service (Figure 5A); U. S. Soil Conservation Service (Figures 4, 5B, 75A, 76, 84, 89).

Many persons in the State Department of Education and in various positions at Florida State University have provided specialized help throughout the period of the study. It might almost be said that in producing a text of such wide scope, assistance was requested of nearly everyone within reach. Those who worked on the project are deeply grateful to the many persons who gave so willingly and cheerfully of their time and knowledge.

It is hoped that this volume will aid the boys and girls of Florida to understand more clearly the problems confronting the State and to appreciate more fully its opportunities.

Thomas D. Bailey
State Superintendent
of Public Instruction

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Resource-Use Education in Action

(Suggestion to Teachers)

POINT OF VIEW

This text, *Florida: Wealth or Waste?*, attempts to present to teachers and pupils the necessity for a careful and analytical re-examination of how man is using his total resources in this state. People everywhere are faced with the need for making constant readjustments in their living to fit an environment conditioned by an increasingly rapid rate of change. Only by courageous and realistic appraisal of conditions as they are can the people of Florida hope to recognize and solve the numerous existing resource-use problems.

The vitality of an educational program depends largely on the degree to which it grows out of and helps to meet human needs in community, state, region, and nation. These needs to be met by education are frequently stated in terms of four basic aspects of living: personal, immediate personal-social relationships, social-civic relations, and economic relationships. Needs in these four areas must be met by centering education on understandings, attitudes, and skills essential to more effective living. Resource-use education, dealing as it does with needs growing out of many vital phases of human life, affords unparalleled opportunities to contribute to the development in children of such basic understandings, attitudes, and skills as suggested below:[1]

A. Understandings

1. That the scale of development and levels of living attained by a people depend to a large extent upon the resources of a region and how they are used.
2. That the conservation (wise use) of human and natural resources is imperative to the well being of the people of any region.
3. That man should play an active rather than a passive role in adjusting and readjusting to a continuously changing environment.
4. That past experiences can contribute to solving present day problems.

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[1] *Florida School Bulletin,* Volume VIII, Number 3, pp. 22-23, State Department of Education.

5. That there is need for people to adjust to the *natural disadvantages* as well as to the *natural advantages* of a region.
6. That modern industrial development has accelerated the rate of the use of natural resources.
7. That specialization in work leads to interdependence between people of different regions.
8. That the economic, political, and social conditions and conflicts of people in various parts of the world are in part an outgrowth of their natural environments or of their use of their environments.
9. That interdependence and widespread misuse and waste of natural resources in the past and at present make it imperative that all nations have programs of wise resource use for the benefit of this and future generations.

B. Attitudes

1. Honest curiosity regarding the relationships existing between human and natural resources.
2. Appreciation of the achievements and ways of living of other people.
3. Tolerance for resource-use problems and conditions of other people.
4. Intolerance for needless and inexcusable waste.
5. A realization of the futility of a blanket indictment of past use or misuse of resources.
6. Willingness to participate in a program of better use and adjustment.
7. Personal responsibility for wise present and future use of human and natural resources.
8. An intelligent interest in fitting resource-use into an active community program.

C. Skills

1. A study of resource use contributes to the development of such general study habits as ability to think accurately; to follow directions; to use the dictionary, atlas, indexes, and tables of contents effectively.
2. Resource-use study trains pupils to work independently in
   a. Securing significant information from landscapes, pictures, maps, graphs, statistics, and from reading materials.
   b. Raising significant problems from facts gained.
   c. Organizing effectively facts gained from various sources.
   d. Learning to put significant information into written form, on maps, and into graphs.
   e. Applying knowledge gained as an aid in understanding and interpreting present and past events, and in attempted solutions of present day problems.

ROLE OF THE SCHOOL[2]

"Among the agencies in the South which must educate people for full and wise use of all resources is the public school. More than nine million students and probably eighteen million adults are affected directly or indirectly by its program each year. If teachers and administrators in the public schools are to capitalize upon their tremendously challenging opportunities, they will need to understand clearly what is meant by education in resource use and how it may be made an integral part of an ongoing, functional program to improve the quality of living in the 'here and now,' as well as in the future. In short, they will need to know the 'what' and 'how' of resource-use education. . . .

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[2] Fonville, Mary Sue, "Classroom Teachers Make Resource Use Vivid." *Education Helps Build a Region,* pp. 139-140, University of North Carolina Press, 1946. This article expresses so well the philosophy of resources-use education that parts of it are quoted here with the kind permission of the editors, Dr. John E. Ivey, Jr., and Mr. Harry B. Williams.

"Resource-use education does not purport to be new or revolutionary. It is rather an attempt to expand, unify, emphasize, and vitalize what has long been recognized as an essential part of an adequate and effective educational program for the public schools in America—conservation education. In other words, resource-use education is all that conservation aims to be, and more too.

"Resource-use education goes beyond the usual concept of conservation education in several ways. First, it interprets resources as including not only natural resources but also human resources—the quality and quantity of the population—and social resources—customs, institutions, capital, and skills. Second, resource-use education recognizes as fundamental certain principles or concepts not included, or not sufficiently emphasized, in the usual conservation texts, and teaching procedures:

(1) There is an uncompromising unity and balance among all the elements of the natural environment.

(2) The natural and social environments are inter-dependent. There is an inescapable companionship between nature and culture.

(3) The attitudes and customs of groups, as well as their skills and institutional arrangements, condition the use that they make of their resources.

"Third, resource-use education differs from the usual conservation instruction in that it seems to offer a more positive, creative approach to the problem of using all resources. It is careful to emphasize that wise resource use does not mean the locking up and hoarding of resources. It means that resources must be used in such a way as to maintain the natural process of replenishment. Only the use of resources will result in higher levels of living. Their scientific use will also insure their availability for future generations . . . .

"Both the starting point and the methods employed in resource-use education depend upon the same variable factors which condition any other part of a sound educational program: (1) the general nature and needs of the *local community;* (2) the needs and achievements of *the pupils;* (3) the philosophy, the curricular content and organization, and their relationships in *the school;* (4) the knowledge, interest, ingenuity, and cooperativeness of the *teachers and administration;* (5) the available *materials, facilities,* and *services.*

"Since this is true, there is no 'one right way' to begin or to proceed in developing an effective program of resource-use education. There are, however, certain important considerations which should have the continuing attention of both teachers and administrators concerned with such a program.

"In the first place, resource-use education should be considered an *evolving* aspect of the *total* educational program. The knowledges, understandings, attitudes, skills, and habits which are its objectives cannot be developed in one unit or in one course. They can be achieved only if the programs of pupils at every level from the primary grades through the secondary school provide experiences designed to build them up. Therefore, the final effectiveness of resource-use education will depend on the extent to which the philosophy underlying it pervades the school's curricular and extra-curricular activities and the concepts fundamental to it are woven into different units and courses with continuity and consistency.

"This does not mean, of course, that it may not be desirable at some point, probably at the junior high school level, to offer a course in which students have a chance to draw together, interpret, and integrate their earlier learnings about resources and their use. In fact, it seems to be the opinion of a number who have studied this matter that such a course may not only be desirable but essential.

"Another consideration to be borne in mind is that while the subject fields of health, home economics, science, and social science will furnish the basic facts and concepts concerning resources and their use, the fields of art, music, language, and literature have invaluable contributions to make, especially in developing those attitudes and appreciations without which knowledge might never be expressed in action....

"Even more, perhaps, than some other aspects of a school's program, resource-use education must grow out of the needs of the pupils concerned and must have both roots and results in the community situation. Its nature, purpose, and procedures all demand this. Therefore, among the considerations to be kept before those who are initiating or expanding such a program is the necessity for identifying as soon as possible the needs of the pupil and of the community in terms of their use of their resources. To be sure, certain resource-use needs are common to all communities . . . . Fortunately these have, for the most part, already been identified and authoritatively set forth in publications easily available to teachers and administrators. However, in some communities certain needs may be more acute than others and if these are duly recognized, they can indicate both the point of beginning and the first lines of emphasis for the resource-use education program."

The most helpful single publication on resource-use education and its development in the South is *Learning by Living: Education for Wise Use of Resources.* This bulletin was produced jointly by the Southern States Work Conference and the Committee on Southern Regional Studies and Education. It contains examples of school activities, explanations of aims and purposes, suggestions on how to proceed, and an excellent bibliography on resource-use education. Unfortunately, the bulletin is now out of print, but copies are available and in widespread use in many schools and colleges throughout the South.

MATERIALS OF INSTRUCTION

Pupil and community needs can be met best in a school environment that encourages thinking, questioning, and the solution of problems. Use of material in this book by traditional reading-recitation procedures will defeat the purpose for which it was intended. Successful results will be attained in the classroom when the teacher and pupils work together in a problem-solving laboratory situation with the teacher guiding and participating in activities initiated by the group to discover or help solve their own community problems.

While there has been a vast amount of research dealing with resource-use in the South, only recently has any effort been made to channel it into educational materials. Thus, there is at the present time a dearth of suitable material for pupil use which deals with the inter-relationships of all the resources of Florida.

Therefore, this book *Florida: Wealth or Waste?*, the color film by the same name, and the community itself will be the principal sources of materials for a class discovering how this State uses its resources. The twenty-five minute film, "Florida Wealth or Waste?," presents in brief compass Florida people using their resources; the successes they have achieved and mistakes they have made in the use of resources. It poses the question: "Shall we choose wealth for Florida's people or shall we choose waste? The choice is in our hands." This film is suitable at the beginning of the study of Florida as an introduction, as a summary at the end, or part way through the study. Several counties have the film in their libraries. It may also be secured through the General Extension Division Film Library (Gainesville) or from your District Forester (Panama City, Tallahassee, Lake City, Ocala, Lakeland). A pamphlet on the use of the film is available free from the State Department of Education.

It is suggested that this text be used in ninth grade classes. Teachers of civics, science, and general mathematics will need to discuss the implications of specific resource-use education problems in their respective fields. They may decide to use this text in one subject or plan its use cooperatively. Teachers of all grades will find it a useful reference for resource material. Its primary purpose is to serve as a source of reliable information, a guide for discovering and doing, and one means of developing desirable understandings, attitudes, and skills. The community, large or small, will provide numerous sources of previously unavailable or undeveloped materials for the teacher who is skilled in recognizing and utilizing opportunities.

Many pupil activities have been suggested in this book. One of these is group planning through discussions of the major problems facing the Nation, the Southeast, and Florida, with special emphasis on the local community.[3] Group discussion of important problems and panel discussion, which have grown out of special reports or surveys and are led by individual pupils, are two effective devices. The teacher should provide plenty of opportunities for this type of activity in order that the pupils may develop the ability to think carefully and accurately about matters vital to their own community. There is a definite need to teach them to gather information, to organize it, and to evaluate it in an objective manner. Guidance is necessary to see that they are dealing with problems with which they can help; sometimes the problems may be vital but cannot be solved by children's thinking, even though they should be aware of them.

Many maps, graphs, and tables have been included in this book. As each type of map is introduced in the text the teacher must make a special effort to help the pupil interpret it. As it is referred to again or a similar map is used, the teacher can check on the pupil's ability to obtain the desired information. It would be a fallacy on the part of the teacher to assume that most pupils will be able to interpret these materials for themselves. This is a place where careful guidance is needed. Children should be encouraged to make additional maps when a need for them arises. Copies of an outline map of the State (8½″ x 11″) may be obtained from the University Book Store at Florida State University,[4] or similar maps may be made with duplicating equipment. Large county maps may be secured from local sources or from the State Road Department in Tallahassee for twenty cents.

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[3] *Exploring the South* by Rupert B. Vance, John E. Ivey, Jr., and Marjorie N. Bond (University of North Carolina Press, Chapel Hill, North Carolina, 1949) is probably available in your school. It is excellent for information on the entire South.

[4] Outline maps of this size and larger (15¼ x 15½ inches and 31 and 32 inches) are available at the University Book Store, Florida State University, Tallahassee, Florida. Write for prices.

Those from the latter source have many kinds of valuable information on them. In addition, an excellent sectional map of Florida showing railroads and political boundaries may be obtained free from the State Department of Agriculture.

In many cases it would be both helpful and practical to request assistance and cooperation from the mathematics teacher in the interpretation and making of graphs. Several types are found in this text and their use will probably have to be explained. The making of other graphs will help the children present information relating to their community resources in a clear and attractive form and will give them practice in using or developing several skills. Sometimes information for comparative purposes can be given more clearly or economically in tables. Reading tables for desired information is another skill in which the children require guidance. An attempt has been made in the text to keep the tables and graphs as simple as possible. These may serve as a pattern for those prepared by the pupils.

In order to make the best possible use of the available material, many teachers will wish to obtain two additional copies of both the old (1946) and the new editions of this text for the purpose of cutting out and mounting the maps, graphs, and pictures for maximum use in interpretations and comparisons. Changes that have occurred in Florida since 1940 can be clearly shown by comparing maps and graphs from the two editions. The illustrations may be passed around the class, posted on the bulletin board, or used in an opaque projector. This suggestion is made because teachers cannot secure most of this material from other sources.

In order to secure additional information regarding the community, surveys of many types should be developed. Guidance in selection of information to be obtained and methods of making the surveys will be necessary. If desirable results are obtained, the problem will have to be defined and specific questions listed to be answered by means of interviews or field trips or both. Participation in such activities, if properly supervised, will help children to gather information and to evaluate it objectively.

The suggestions contained in Chapter 1 on study of the home county and in sections throughout the book headed "EXPLORING FOR YOURSELF" are designed to stimulate interest in understanding the use of resources in the local area. An excellent record of resource use in the community can be secured by taking pictures of homes and of good and poor practices in using forests, farmlands, bodies of water, minerals, etc. These, together with pamphlets and mimeographed materials, can become valuable additions to the vertical file. Pictures, maps, and graphs showing local conditions can also be used by pupils in assembly programs or in presentations to PTA groups or civic clubs.

Many schools will use movies and film slides in addition to the materials suggested in the text. Film libraries in the county should be checked for suitable movies. Many state and local agencies have films to lend to schools. Valuable help in knowing what is available may be obtained from the General Extension Division.[5] However, the teachers will have to use great care in selecting and using this type of material to be sure it helps to develop the basic understandings.

The Florida Resource-Use Education Committee (see Preface) has prepared a mimeographed publication for the State Department of Education called *Resource-Use Education Materials and Their Use.*[6] It contains a checklist of available materials on various Florida resources free or at low cost, a bibliography for teachers, and suggestions to teachers of resource use in grades one through twelve. (These suggestions were originally printed in the *Florida School Bulletin* for December, 1945).

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[5] General Extension Division, University of Florida, Gainesville, Florida.

[6] Available free from the State Department of Education, Tallahassee.

Only when better use of all resources is realized will Florida's people be able to improve their living. If the children using this text read it without carrying out its suggested activities in their own communities and without initiating other activities, their time will be wasted. Most of the facts presented have been known for many years, but only by recognizing them and doing something about them will the children and adults in the community be able to achieve greater well-being through a higher level of living. To this end the classroom must be part of the community; the school cannot be an island. Some information about the local community can be obtained from various sources, but much will have to be obtained by local surveys and field trips. In addition, there will be many people who will be able to give valuable aid by speaking to classes or to school assemblies. Other valuable community resources include such agencies as the local civic clubs, health units, and city, county, and federal offices. The latter would include the representatives of the Soil Conservation Service, the County Agricultural Agent, and the Home Demonstration Agent. Very valuable suggestions regarding the classroom planning involved in using the resources of a community are given by Edward G. Olsen.[7] The section of the pamphlet prepared for county studies by the Florida Citizens Committee on Education (out of print but copies available in many school and college libraries) which deals with resources and education, will prove valuable to the teacher planning a county study.

Although there is a lack of books or pamphlets which cover all phases of resource use in Florida, there are many free or inexpensive materials which contain valuable information on one or more subjects. These may be kept for use in a vertical file along with newspaper and magazine clippings. In addition, pamphlets, magazines, and newspapers are good sources of pictures for bulletin boards, opaque projectors, or the making of charts and booklets. Some agencies which have free materials available include:

Florida Department of Education, Tallahassee
Florida Department of Agriculture, Tallahassee
Florida Forest Service, Tallahassee
Florida Geological Survey, Tallahassee
State Department of Conservation, Tallahassee
State Board of Health, Jacksonville
State Chamber of Commerce, Jacksonville
General Extension Division, Gainesville
United States Forest Service, Washington, D. C.
Division of Water Survey and Research, Tallahassee
Florida Park Service, Tallahassee
Game and Fresh Water Fish Commission, Tallahassee

Many times schools will wish to prepare their own materials for the study of local resource use. These might well include pictures, film slides, charts, maps, graphs, and written reports which would be very valuable additions to any resource-use program. Moreover, some classes, schools, or whole counties may desire to make a county study of resource use It is suggested that this would probably involve a time span of more than one year. Items for study should be chosen on the basis of the needs of the community and the interests of pupils involved. The method of conducting the study should receive careful consideration before being put into execution. After data are collected, specific plans for evaluation should be made. These should lead to constructive action.

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[7] Olsen, Edward G., *School and Community,* Prentice-Hall, 1945.

Chapter I

Wealth or Waste?

Did you ever cross the State from Jacksonville to Pensacola? If not, you may have made a long trip across some other part of the State. Did you notice a great deal of country like that in Figure 2A? More than half of the land of Florida was at one time covered with fine trees similar to those in Figure 2B. In fact, there was so much fine timber in the State that for many years the people who settled here obtained lumber, turpentine, and rosin from the forests without even bothering to protect the small seedlings or keep out fire.

Now, however, it is known that such wasteful use of timber causes land that once gave work to many men to become ugly and useless like that shown in Figure 2A. It is known, too, that when land is made unproductive, the people who depend upon it for a living either move away or become poorer. Another result of using forests wastefully is that as timber becomes scarce the price of lumber and wood for fuel usually rises. Find out how the cost of wood compares with that of other building materials now. Ask some older persons how these costs compared twenty years ago or more.

On some of the former forest lands such crops as vegetables, citrus, corn, and pasture grasses have now been planted. Some of it also has been used for towns and highways. However, much of it was not suitable for these uses and is now covered with worthless blackjack oak, saw palmetto, and scrubby bushes. Pine seedlings tried to grow in these places, but year after year fires left each new crop of them charred and dead.

Some of these lands are now protected from fire and are growing up in young pines (Figure 2B). People now know that taking care of such lands makes it possible to use wood products from them continuously and still keep them in excellent condition.

People everywhere on the earth obtain their livings by using what is available to them where they are and by trading with other peoples for additional materials. Anything people use to live and make a living is called a *resource*. You as an individual have resources. Good health, for

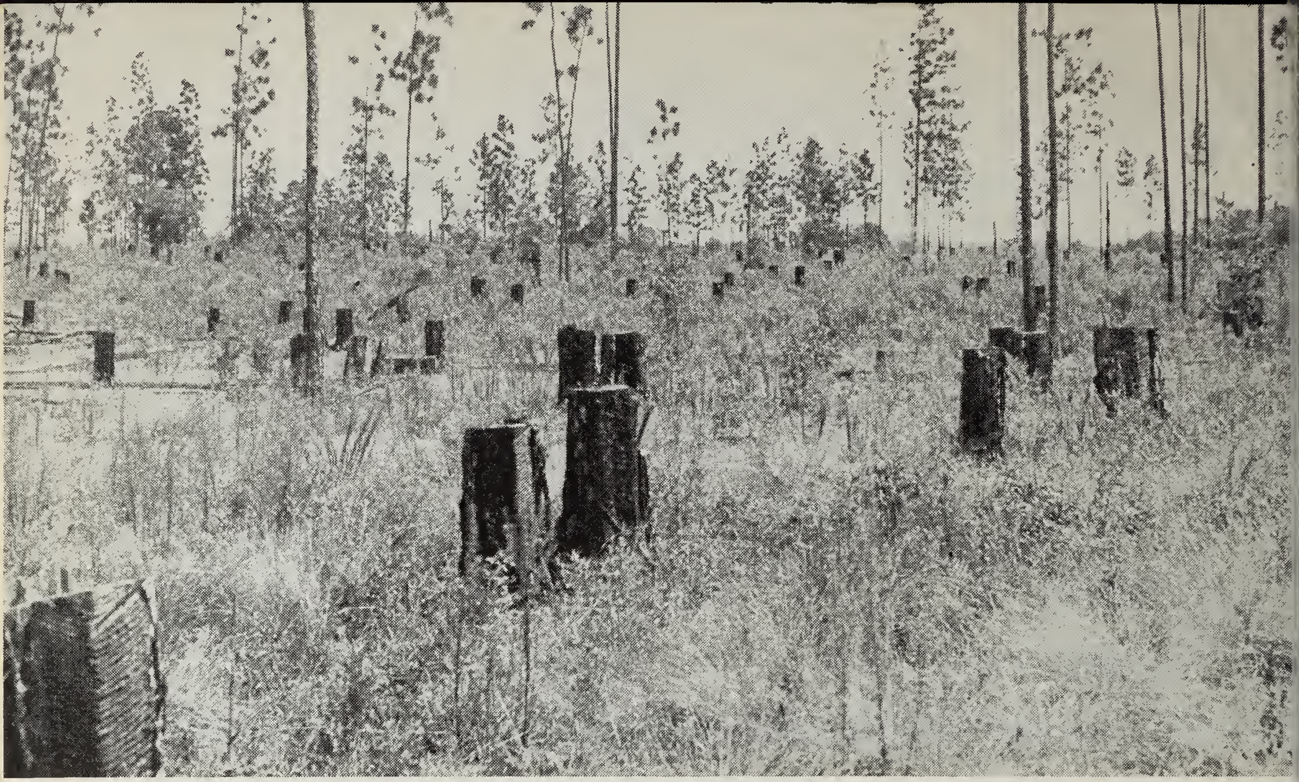

Figure 2A — Wasted forest land

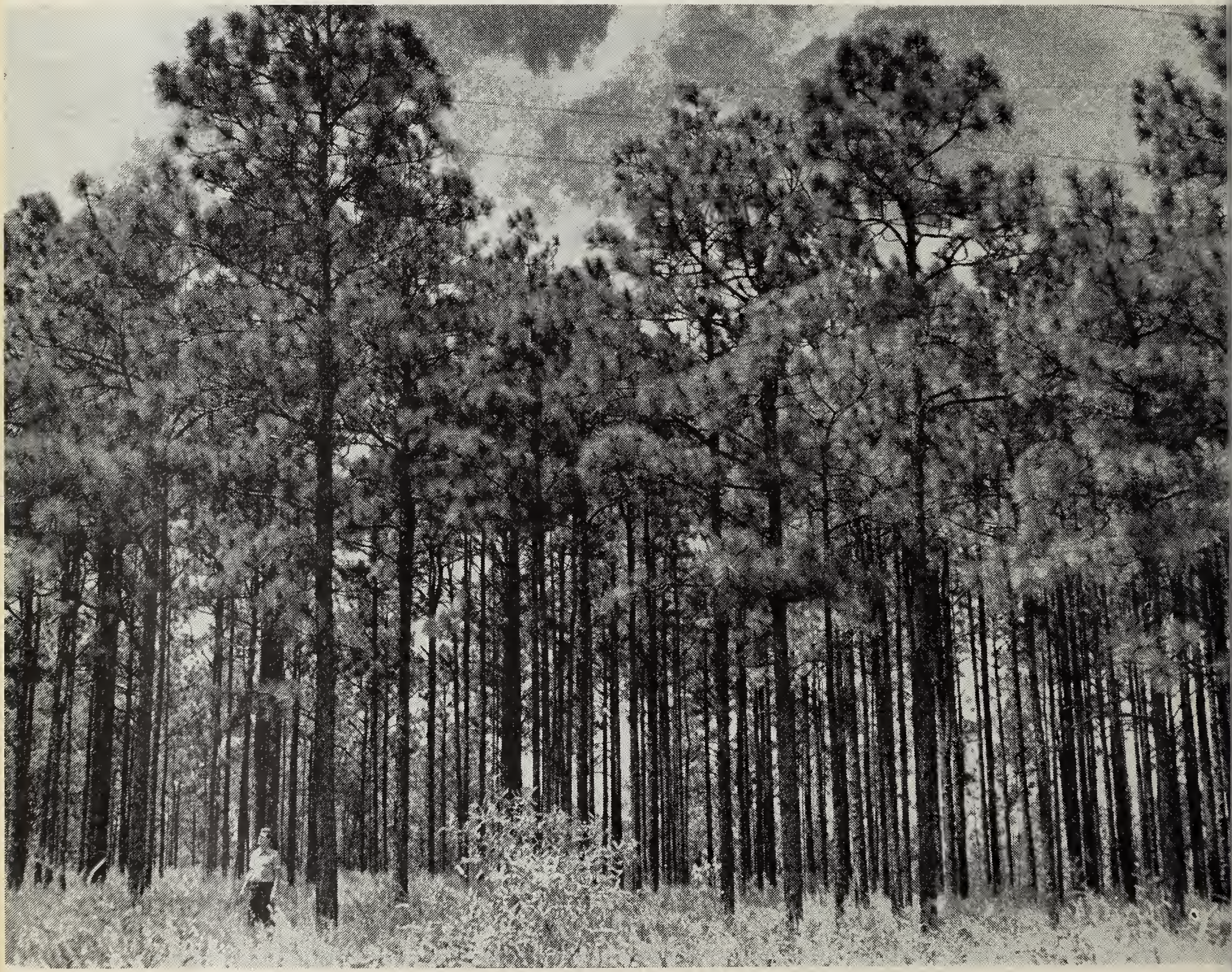

Figure 2B — A thriving forest

example, is a resource that helps you to work and play. The school you attend is a resource because it helps you to be a good citizen now and when you become an adult. The house you live in, the food you eat, the clothes you wear, and the playground where you play are all resources.

USING THREE KINDS OF RESOURCES

It is helpful and convenient to think of all of man's resources as being of three major kinds.

Natural Resources. Every county, state, and nation has highly valuable assets to living in the endowment of trees, minerals, soils, fish, game, and other things given it by nature. The above example of wasteful and destructive use of forests shows that if *natural resources* are badly used, people also suffer. A county, state, or nation cannot long be prosperous unless all of its people can earn enough money to live well. In order for people to benefit century after century from their natural resources, they must plan wisely and carefully to prevent waste and to provide a continuous supply of trees, grasses, game, and other resources. Without natural resources people could not survive.

People as Resources. People use their brains to think out new and better ways of using natural resources to meet their needs for food, houses, and many other things. They invent tools and machinery to make work easier. They also use their muscles in doing necessary work. Do you see why people can be called *human resources?* Is it not clear that healthy, alert, thoughtful and highly skilled people make the best and most valuable resources there are? Some of our leaders have pointed out that human resources as well as natural resources can be wasted. Preventable illness, poor housing, and lack of education make people less valuable as resources.

Social Resources. Groups of people establish government, schools, banks, courts, soil conservation organizations, youth improvement clubs and the like. Each of these does a job that has been found necessary to the welfare of the citizens. These institutions and agencies are sometimes called *social resources.* Have you ever heard anyone speak of a good school? A poor school? Do these descriptions not suggest that social resources, too, need thought and attention to keep them at their best to serve people?

NATIONS LIVE OR DIE

Some Examples From Ancient History. Have you ever wondered why many of the great nations you have studied about in history are now of little importance or have disappeared altogether? One key to the answer for this question is the way they used their resources.

In desert lands along the eastern and southern Mediterranean, scientists have unearthed the ruins of once great civilizations. Forests and grasses once covered these lands. It is now believed that man destroyed these resources by using them unwisely. Too many animals were pastured on the grasslands. They destroyed the grasses by eating them too closely and by tramping over them. Left bare, the rich top soil was then blown about by the wind and washed away by hard rains. This wearing away of soils is called *erosion.* Forested mountain slopes were also eroded by floods when most of the trees were cut from them.

Many scholars now think that this misuse of the land was one of the major reasons for the decline of the former nations of this region. Perhaps you can remember other causes from your study of history.

Wise Use of Land. While some nations were destroying their *resource wealth,* others were using theirs more wisely. Such a nation is Switzerland. For a thousand years her people have practiced methods of land use which actually have enriched her soils. They cultivated only the lower, more level valley lands. They planted the steeper highland slopes to grasses and trees to hold the soil in place.

Good Planning. Denmark unlike Switzerland, misused her lands so badly that by the middle of the last century many of her people were moving away because they could not make a living. Her forests had all been cut. Lack of coal, iron, or water power made it difficult for her to become one of the industrial nations of western Europe. When the fertile prairies of eastern Europe and of America began producing grains, Denmark found that her poor sandy soils could not compete in the growing of cereal crops. Hopeless as that situation seemed, a few Danish leaders formulated a plan that turned Denmark into a prosperous nation. These leaders studied the natural resources of their country and the markets in the neighboring countries to find out what Denmark could produce and sell. They knew that Britain and other manufacturing countries (which could not produce all the food they needed) would buy butter, bacon, and eggs at good prices. So the grain lands were divided into small farms and planted to pasture and fodder crops which grew very successfully in the sandy soils and in the cool, damp climate of Denmark. These crops, together with some imported feeds, were fed to animals and converted into butter, bacon, and eggs for the breakfast tables of England and other neighbors. Schools taught courses in agriculture to help people become better farmers. Thus, with the aid of education and science to improve methods of production and marketing, Denmark was soon selling at top prices the best quality butter, bacon, and eggs in the world. As a result of this re-planned use of her resources, Denmark was successful in providing well for her people. At the same time she made for herself a highly useful place in both Europe and the world.

Poor Planning. Some nations have waged war to gain resources from their neighbors. The end results of these wars, however, has been neither greater well being for citizens of the aggressor countries nor the creation of a better world. Sometimes, as a result of persecution many of a country's most capable people are driven out or flee to other countries. During war and preparation for war natural resources are made into war equipment instead of into the articles people need for daily living. Following World War II, for example, the rest of the world has shared the burden of helping to restore, whenever possible, those resources of Europe which were destroyed or damaged by Germany or by the Allies. This result can hardly be called a wise use of resources.

Could the United States Also Decline? Many thoughtful Americans have asked whether the United States will continue to

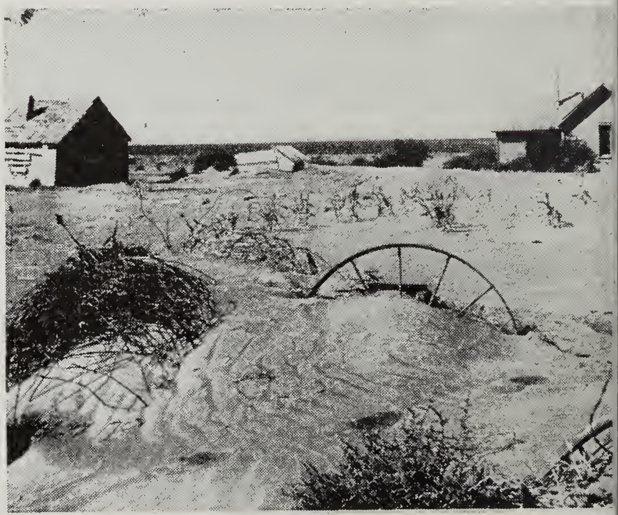

Figure 4 — Wind erosion

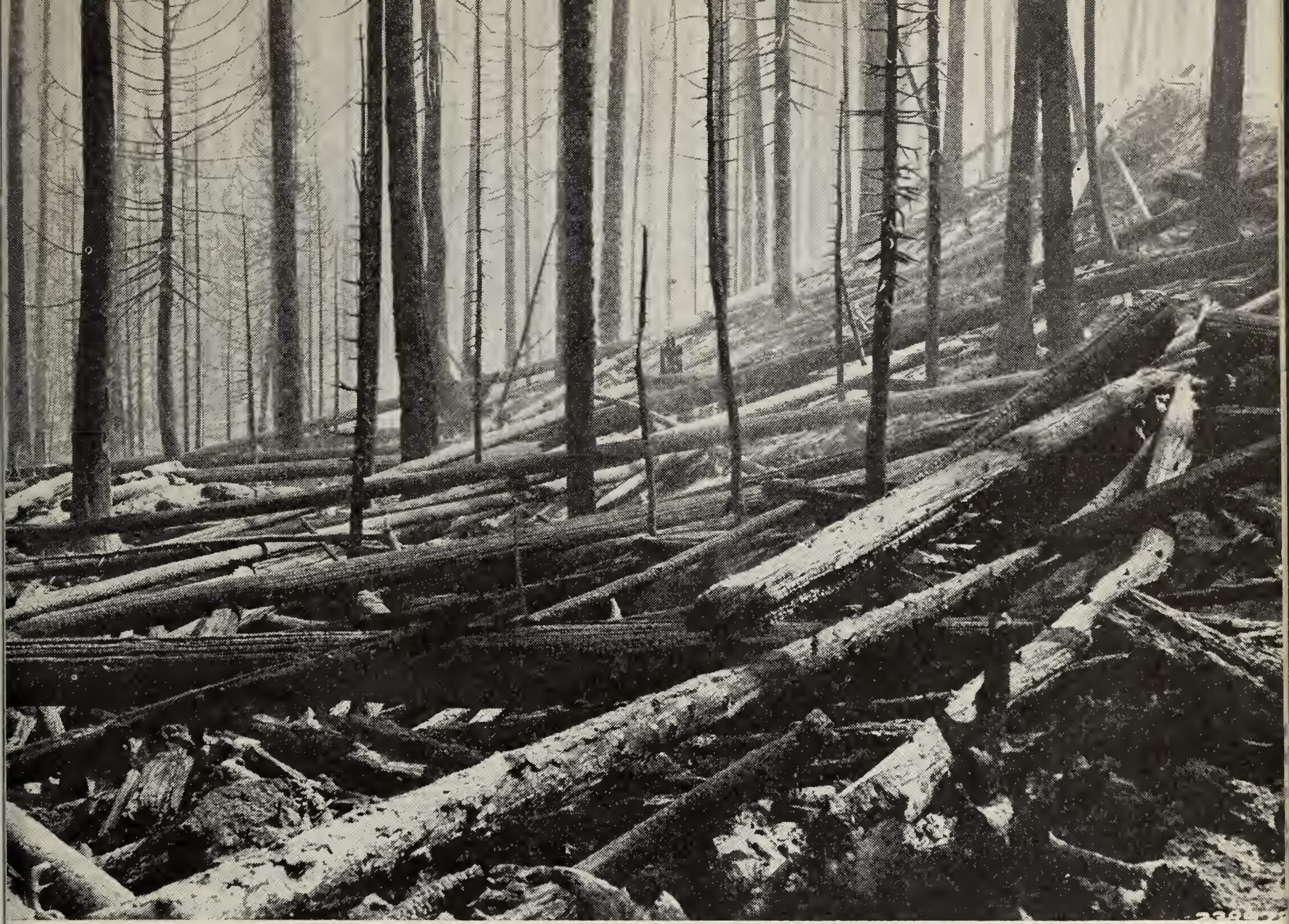

Figure 5A – Forest destroyed by fire

be a leading nation of the world. The American people gave little time or thought to the prevention of waste as long as they could still find good new lands. A few decades ago, however, they awakened to the fact that all the new lands had been claimed—the frontier was gone. To make matters worse they discovered many frightening evidences that their resources had been very destructively treated. For example, in the misused, dry wheat lands and over-grazed plains, winds raised great dust storms which removed fine top soil (Figure 4). Dust-filled air extended far to the east, even many hundreds of miles out into the Atlantic Ocean. Disastrous forest fires brought flaming death to animals and trees, as well as to human beings (Figure 5A). Soil erosion became a serious problem on more than half of the crop land, (Figure 5B) as well as on much of the deforested and over-grazed land.

Many American families moved out of badly misused areas to other parts of the country which often lacked work for new people. The problem of finding enough jobs was made harder by the absence of new lands on which to settle. A great

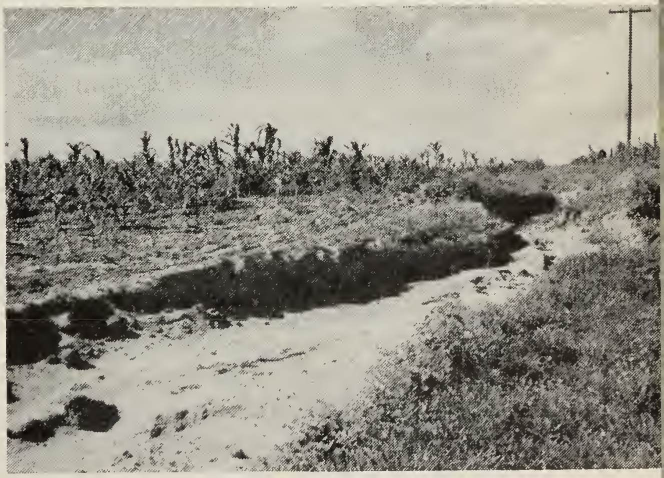

Figure 5B – Eroded farm land

many families, however, remained in these mistreated areas. Lowered production led to unemployment and poverty. People had poor food, run-down homes, fewer comforts of living and recreational advantages, and run-down schools. These in turn resulted in poor health, discouragement, lowered human efficiency, and the inability to live and work happily and successfully.

For many years a few thoughtful leaders had been warning the American people that they must not continue this destructive use of natural and human resources. As more people became aware of the facts, plans for repairing the damage were begun. Gradually many acres of eroded lands were returned to their original use as grasslands or forest. These lands will now yield products for human use instead of being subjected to dust storms, forest fires, and floods. Such natural resources as these that can be restored to productivity and kept continuously productive are called *renewable natural resources.*

Mineral resources, because of the slow rate at which they are formed, are not replaced by nature as fast as man uses them. When these non-renewable resources have been used, they are gone forever. Even a few years ago only one out of every five barrels of oil mined was recovered for use. Now, through the development of less wasteful mining and handling methods, only one out of five barrels is wasted. A nation as dependent on minerals as the United States should be greatly concerned with their wise use.

Much has been accomplished in improving the use of renewable and non-renewable natural resources in some parts of the United States, but a great deal more remains to be done. Waste still goes on. The advice of experts is often ignored as the American people continue to misuse the land, minerals, and other resources.

Putting Knowledge to Work. People have not always had sufficient knowledge about resources to use them wisely. Therefore, some of the mistakes they made were difficult to avoid. Today, however, we have available for our use a tremendous amount of scientific knowledge about resources and their use. We can learn also from the past experience of people who succeeded or failed in using resources. If we do not use our resources wisely, we cannot hide behind ignorance: we have only ourselves to blame.

PEOPLE MAY CHOOSE

All of us live in communities of various sizes. Perhaps you think of your town or your county as your community. As transportation and communication have become better and more rapid, people have been brought closer together. We now think of a state, a nation, or even the entire world as a community. This is true because people everywhere benefit or suffer by what people everywhere else do. Can you give examples from recent events?

Americans are fast coming to realize that a community usually can choose between success and failure. If its human, natural, and social resources are destructively and wastefully used, the community becomes poorer and some people move away. Informed people now know that it is possible to use renewable natural resources in ways that will make them increase in productivity. Communities that plan for such wise use of their resources are the ones most likely to become and remain successful in meeting the needs of their citizens. People in these communities recognize the right to use what they need from the natural environment. They will accept also the responsibility of leaving all resources in the best possible condition for the many generations of people who will come after them.

Communities, large or small, will be praised or blamed for the way they use the resources on which their livings and the welfare of succeeding generations depend. Your own generation, like every other, will judge previous generations in this manner. Do you think that your generation will later merit praise or blame for the way resources are used during your lifetime?

YOUR COUNTY COMMUNITY

Why Study Your County? There are several very good reasons for studying Florida with special attention to your own county. It is your state and your county. You are proud of it and want it to succeed. You know that if all its resources are wisely used, there will be enough jobs for all who want work. If the people in each of the 67 county communities in Florida make wise use of their resources, the state community, too, will be well off. All of the boys and girls who study this book can help now to improve the use of resources and make their state and county better places in which to live. They can help even more when they become adult leaders in the county.

A special reason for studying your county is that you can visit farms, forests, other places to *see* how people are using resources. You can also talk to well-informed men and women about why certain things are done as they are. These ways of learning will make your study of books, maps, pictures, and other materials more interesting and valuable. Perhaps you and your friends can suggest some needed improvements and even help to bring them about.

How to Study Your Community. Before you can do that, however, you will need to learn how to study your county. This book contains many suggestions to help you later on. But you can start right away and continue to learn about what is going on around you as long as you live. People who do this become the most valuable human resources a community has.

Here are a few suggestions:

1. Form the habit of looking closely at what people are doing with resources wherever you go. When you are walking or riding to school, traveling about in your county and town, look for such signs as these of how well resources are being used:
    a. Are fields, fences, buildings, machinery, etc., well-kept and attractive?
    b. Are livestock healthy and well-fed?
    c. Are there many acres of wasteland like that in Figure 1? Or do forest lands look well-kept and productive like those in Figure 2?
    d. Are the homes you see painted and otherwise in good condition? Are the yards planted to grass and shrubs and are they well-kept? What about your own home? Is there anything you could do to help?
    e. How do the grounds around your school look? In what condition is your schoolhouse? Does rainwater wash away the top soil and make ditches or gullies? Or does water stand in puddles long after the rain has stopped? Are there ugly-looking spots such as dumps, weed-covered lots, and the like that could be cleaned up? Could you help improve any of the conditions you observe?
2. Do you and your classmates ever waste or mistreat materials made from natural resources? Paper? Chalk? Pencils? Books? Do you leave lights burning unnecessarily? Most electricity used in Florida is generated with fuel oil made from petroleum. Do you live in an area where burning electricity is also burning oil that has to be shipped

into our State at considerable expense?

3. Find out if all parts of your county treat resources in the same ways. If some parts are more successful, see if you can find out why. Your classmates and other people can help you do this.
4. Talk to well-informed persons in your county. Your teacher will know which public officials and others can be of most help to you on a given topic. Examples are your County Agricultural Agent, County Health Officer, and county and city government officials.
5. Make a list of things you observe and a list of other things to look for. Learning to observe and *to see what you look at* can become a very interesting and profitable activity.
6. Take pictures of what you see. Pictures often will show your classmates the important things you saw quicker and better than words. Bring these pictures to school and tell your classmates about them.
7. You may want to share your experiences with people outside your class as well as with your classmates. Your parents probably would be interested in seeing your pictures and in hearing you tell about what you have learned. Other classes in your school may be interested. You might prepare a program for your assembly. In some places in Florida pupils have presented programs about their counties to civic clubs and other interested groups.
8. One good way to keep you and your friends interested in these activities is to form a club which might be called "The Better Resource Use Club." Such a club would engage constantly in learning about how resources of the county are used and about how improvements could be made.

Wise and Alert Community Leaders. People who study and understand what is around them become alert to problems that exist and to the need for improvement. Here are a few suggestions that will help you be a wise community leader. Perhaps you can add some of your own.

1. Be sure of your facts. Sometimes this is easy, but often it is very difficult to be sure you are in the right. Be tireless in your effort to get dependable information.
2. Give other people a chance to think about what you say. Remember that they may not agree with you just because you think you are right. Be pleasant and patient in presenting your information. Learn from others when you can.
3. When you present suggestions for improvement, be sure you have thought about them carefully and are clear on how they will work. Try to detect the weaknesses in your own thinking. Consider various plans. Be ready to accept good suggestions and work out plans with others.
4. A good plan will benefit most of the people rather than just a few. Check your plans to see if they can stand this test.
5. When plans are put into action, let everybody help who can. People take more interest when they take part.

People working together in this fashion to solve their problems practice democracy.

*** EXPLORING FOR YOURSELF—Watch this heading for suggested ways to learn more about your county. Every chapter in this book will have one or more that you may wish to try.

Chapter 2

Florida's People

OUR PEOPLE AND WHERE THEY LIVE

Before white men entered Florida the only people here were a few thousand Indians. Since then settlement by other races has increased the population of the State to its present three million. These people are unevenly distributed over the State and even within individual counties. Some large areas have few or no permanent residents, while other areas have large numbers of people.

In Your County. Look now at the State Road Department map of your county.* It is divided by fine black lines into squares, most of which measure one mile on each side and contain one square mile. By inspecting the legend you learn that houses are shown on the map as: those in use; those not in use. In most counties the map shows clusters of houses in some places and few or no houses in others. Is this true of your county?

Find in your county, if you can, a square mile with no occupied house; another with one or two occupied houses; and another with still more occupied houses. Each occupied dwelling houses an average of about four people. Now determine how many people live in each of the three square miles. The number in each is the *density of population* for that square mile.

If you want to get a general picture of the population density in your county, you must divide the number of people it has by the number of square miles in the county. This gives you the county's *average density of population.* If a county has 100,000 people and 1,000 square miles, its average density of population is 100 per square mile.

In the State. If a state has 3,000,000 people and 60,000 square miles, what is its average density of population? This result is almost the same as the average population density of Florida.

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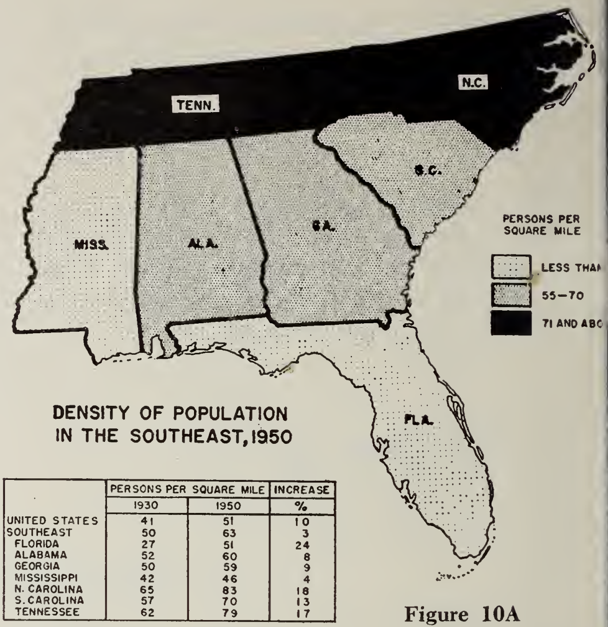
* Your teacher will help you secure this map from the State Road Department in Tallahassee.

Florida is in the southeastern part of the United States. In this book the term the *Southeast* refers to the states of Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Tennessee. You will often find it helpful to compare your State with the Southeast and the Nation.

Does Figure 10A show Florida's population density to be low or high compared to southeastern states and United States?

Compare the population densities of Florida counties as they were in 1940 and in 1950 by looking at Table 1 in the Appendix. Consult map of Florida counties inside front cover. Which county is the



DENSITY OF POPULATION IN THE SOUTHEAST, 1950

	PERSONS PER SQUARE MILE		INCREASE
	1930	1950	%
UNITED STATES	41	51	10
SOUTHEAST	50	63	3
FLORIDA	27	51	24
ALABAMA	52	60	8
GEORGIA	50	59	9
MISSISSIPPI	42	46	4
N. CAROLINA	65	83	18
S. CAROLINA	57	70	13
TENNESSEE	62	79	17

Figure 10A

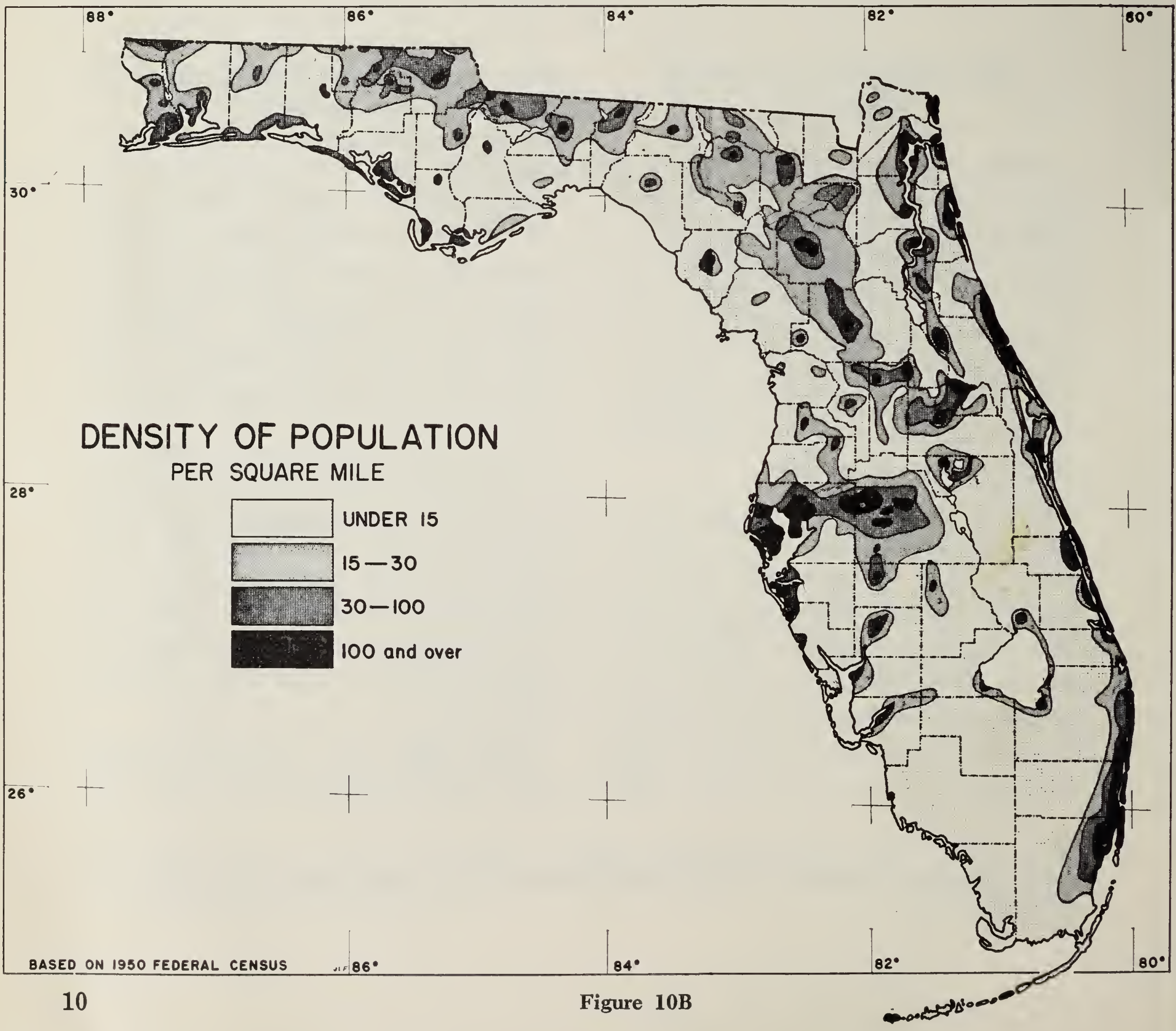


Figure 10B

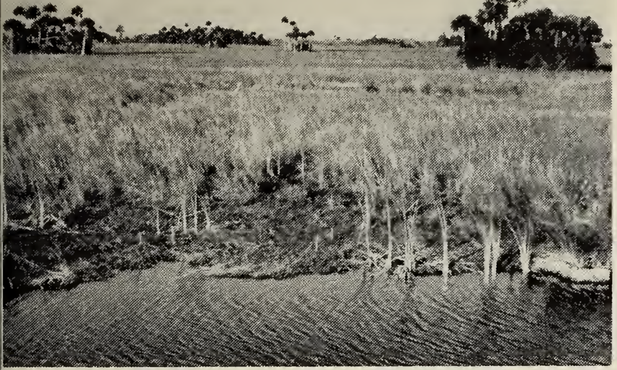


Figure 11A — Scene in Florida Everglades

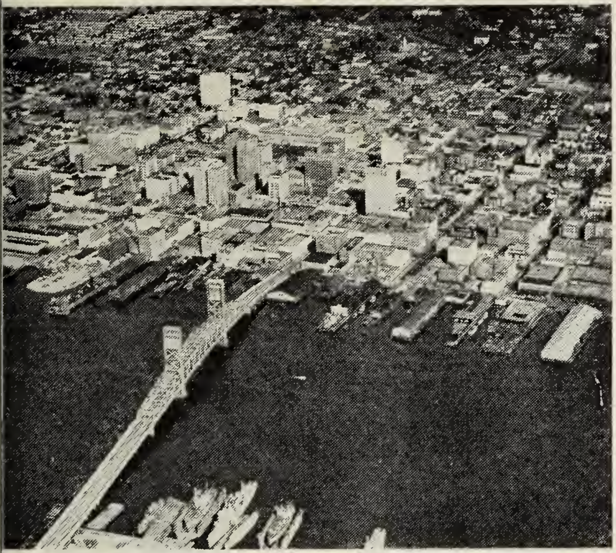


Figure 11B — Part of a city

most densely populated? The least densely populated? What is the population density of your county? How does this figure compare with results you obtained for three different square miles in your county?

A more accurate and detailed picture of where people live is presented in Figure 10B. How do the densities you obtained

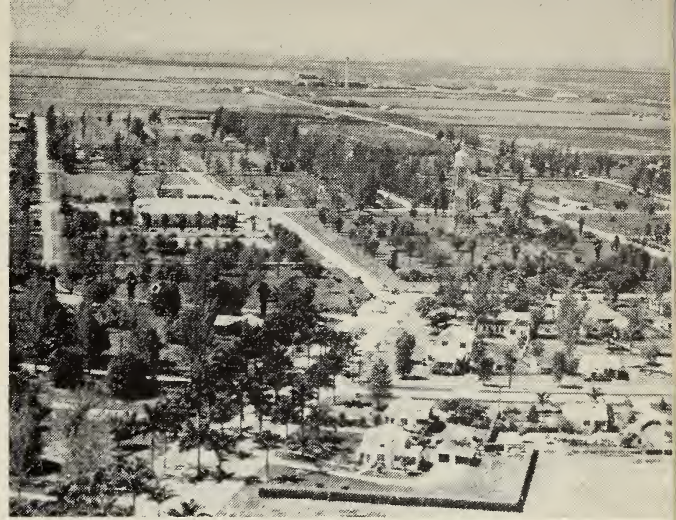


Figure 11C — Part of a town

for three square miles in your county compare with the population density groupings shown on the map? Now you should be able to see the difference between the average population density of a county and the actual population density of parts of it.

Which of the pictures in Figures 11A, 11B, and 11C was taken in an area with few people? Many people? A medium number of people? Why do you think so?

Questions for Further Study. In the preceding pages some important facts about Florida's people were used to raise questions that require further study. These questions are summarized below. Keep them in mind and try to answer them as your study continues. Similar questions will be raised in other sections of the book.

1. Why do some parts of Florida have so few people and other parts so many?
2. Why has Florida so few people for its large area?

*** EXPLORING FOR YOURSELF—Table 1 in the Appendix gives you the information needed to compare the counties of Florida with each other and with the state average. To see the *distribution* of population density, however, it is necessary to place this information on an outline map of Florida. Place in the center of each county its 1950 population density. Color dark green all counties with over 100 per square mile; light green, all those with 50-100; orange, all those with 25-50; and yellow, all those under 25. In which of these groups is your county? By the map you made, what is the average density of Palm Beach County? What does Figure 10B show about the population of Palm Beach County that your map does not show? Write a brief summary of what the map you have made tells you about the distribution of population densities in the State.

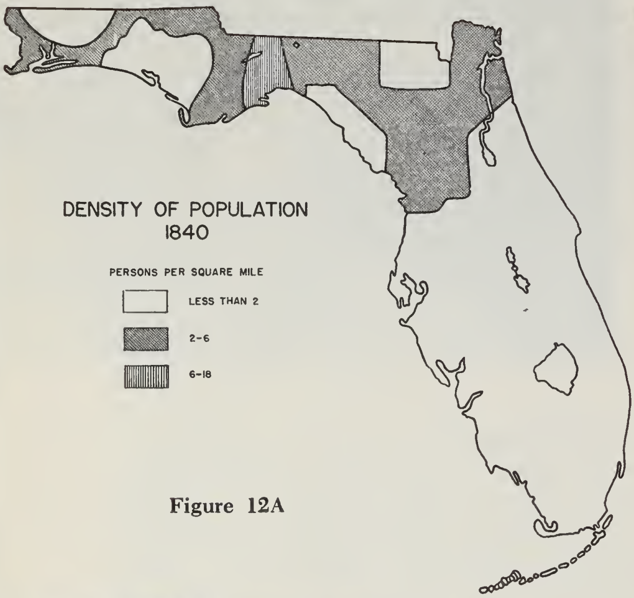


Figure 12A

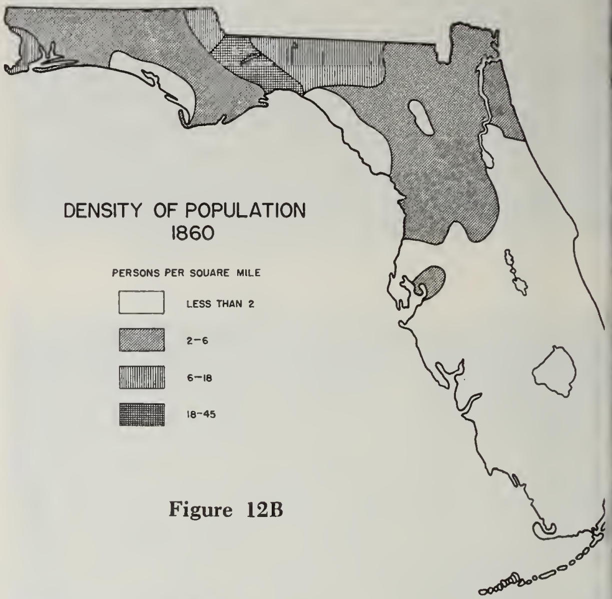


Figure 12B

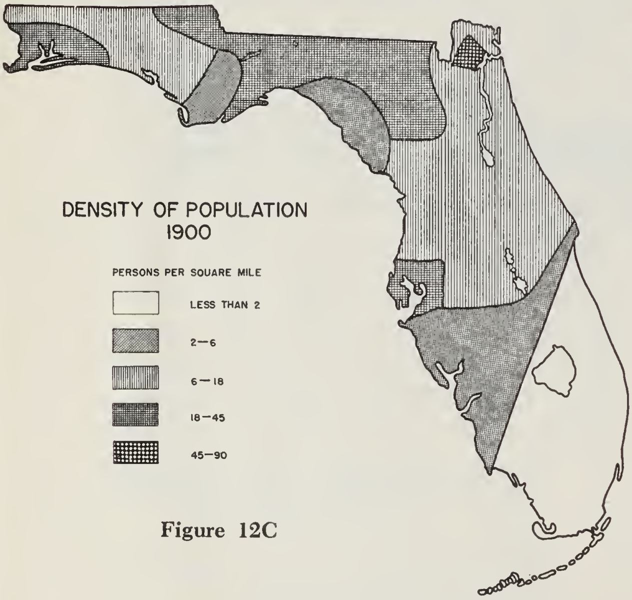


Figure 12C

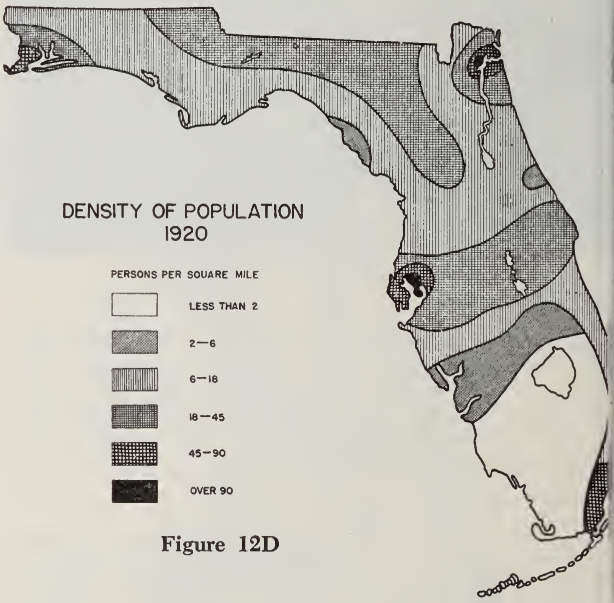


Figure 12D

PEOPLING FLORIDA

The First New Settlers. Before 1500, only Indians lived in Florida. After Ponce de Leon set foot on land of this State, changes gradually began to occur in the number of its inhabitants. St. Augustine was settled in 1565, the first permanent settlement by white men in North America. During the periods when ownership of Florida rotated between the Spanish, French, and English, more people came into the State. Yet even after the United States bought Florida from Spain in 1819, the area remained but sparsely settled. It contained only 57,951 people when it became a state in 1845.

A New American Frontier. After statehood, conditions for settlement were improved. People began coming to Florida in increasing numbers, for it was a new

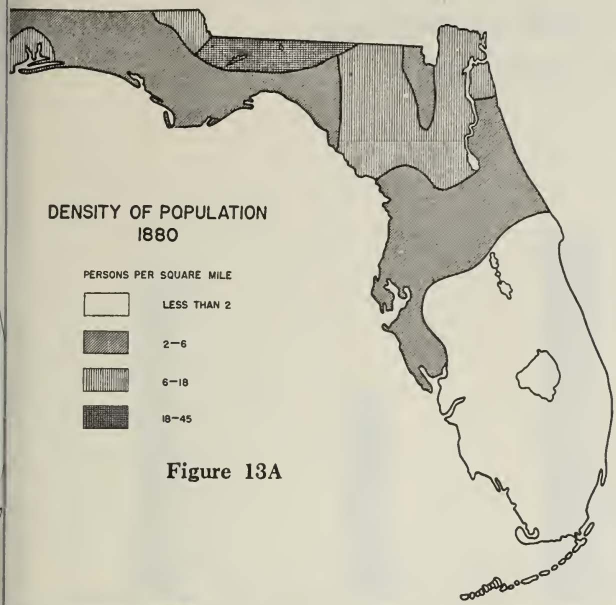


Figure 13A

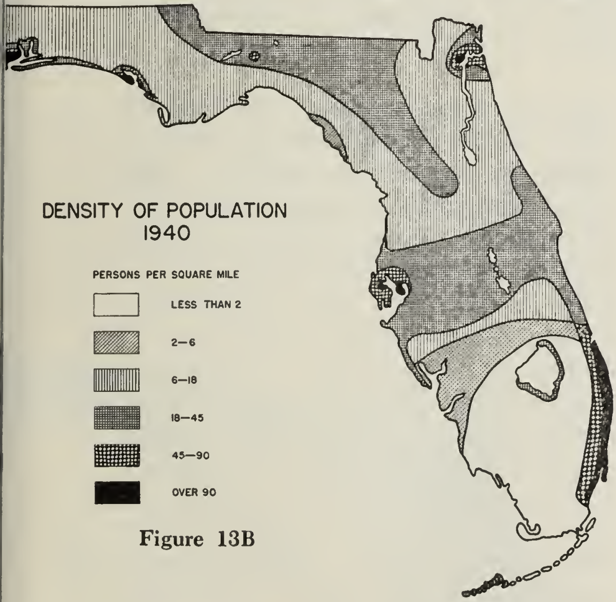


Figure 13B

frontier, like the West, a place to find new land, new opportunities, and to start a new life. Pioneer settlers came from many states, mainly those in the Southeast.

A Pioneer Family. Twelve-year-old Johnny Justin lived in Georgia. He had seven brothers and sisters. His father had a hard time producing enough to support all of them on the few acres of land that he owned. Mr. Justin, thinking of ways to solve their problem, one day asked his family: "How would you like to move to Florida?" Johnny, his mother, and all the family were enthusiastic over the idea. All the children eagerly looked forward to the trip to a new home. Several neighbors of the Justins wanted to settle in Florida, too. Many of them got together and arranged to travel as a group, taking everything they could that would help them in their venture. After a few weeks they reached the northern part of the State and settled there. The land was similar to what they had in Georgia and would grow cotton, corn, and tobacco, the things they had grown before.

Where They Settled. Look at Figure 12A to determine what part of the State was first settled. In those early days of settlement, new residents clustered together in this area. They found the rest of the State unsuited to their uses largely because the soil was too sandy for crops they knew how to grow.

Gradually man began to bring about changes that resulted in increasing settlement in central and south Florida. Figures 12A through 13B show you how people spread slowly over the State. In the latter part of the last century and the early part of this one railroad building progressed southward.

Henry Plant constructed a railroad system into Tampa, with trunk lines to interior points. Down the East Coast Henry M. Flagler extended his railroad as far south as Palm Beach by 1894, and soon to Miami. People followed the rails southward.

*** EXPLORING FOR YOURSELF—You might be interested in finding out when your community was settled, how fast it grew, and why people came there. You will need to ask questions of several people, including any early settlers still living.

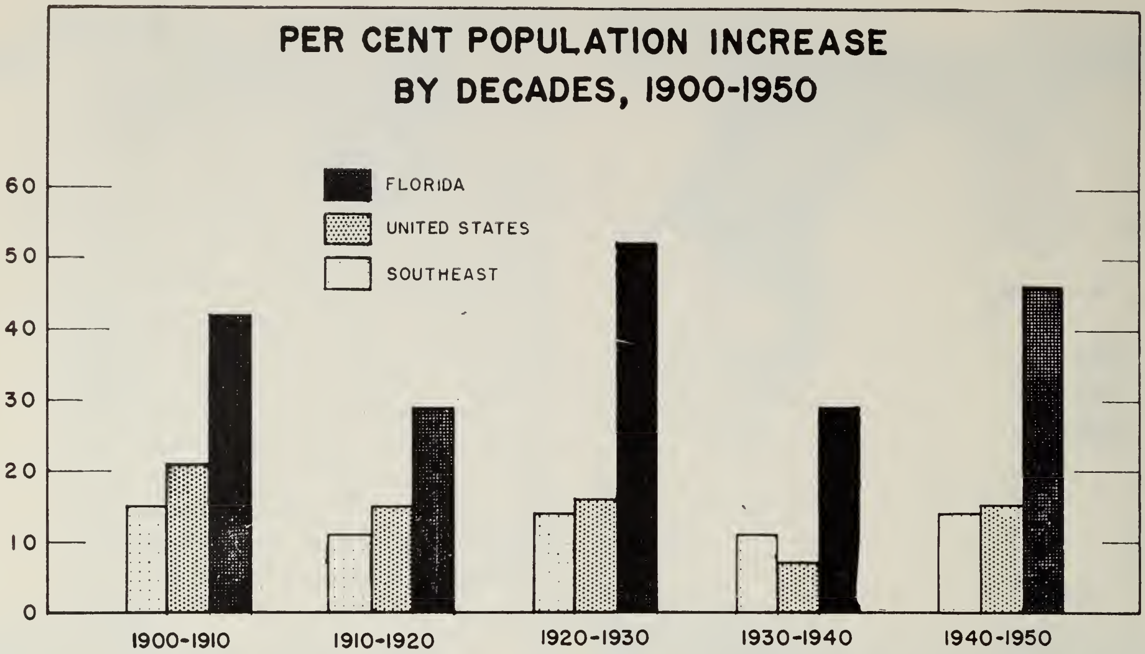


Figure 14

Twentieth Century Expansion The new regions offered people work on railroads, farms, and in business and industry. Highways and cities were built. People began to farm the mucklands of the Everglades. They opened service stations, cafes, and hotels to serve tourists. For better transportation made it possible for people from colder places to come and enjoy the sunny climate and sandy beaches of Florida. From Figure 14 compare Florida's rate of population growth by decades with that of the Southeast and United States.

Recent Growth. In the period from 1940 to 1950 Florida was still growing because of many factors. New industries and agricultural expansion attracted many people. The second World War caused the building of a number of military installations in the State. These brought thousands of servicemen and war workers and their families into Florida. After the war many of these people stayed, or came back to live.

Modern Pioneers. George Jackson's father was a flier stationed at MacDill Air Force Base in Hillsborough County. When his father was discharged from service, the family returned to their Ohio home. As Mr. Jackson wanted to go into business for himself, he looked for a place to start. He chose Hillsborough County because while he was there he had seen the opportunities it offered. And he returned to open a service station. Now George goes to school in Florida and all the members of his family are Floridians.

The Jacksons and many people like them came to Florida as a result of World War II. More recently, military installations caused such counties as Okaloosa, Clay, Bay, Indian River, and others to increase greatly in population. You can see how much they grew in numbers and density by referring again to Table I in the Appendix.

Find out from Figure 15A the per cent of population increase in Florida from 1940 to 1950. How did this rate of growth compare with the United States and the Southeast? Which southeastern state had the greatest increase in numbers? During

INCREASE AND DECREASE IN POPULATION 1940 and 1950

	Population		*Change in Numbers*	*Per Cent Change*
	1940	1950		
United States	131,669,275	150,697,361	19,028,086	15
Southeast	18,425,262	20,927,214	2,501,952	14
Florida	1,897,414	2,771,305	873,891	46
Alabama	2,832,961	3,061,743	228,782	8
Georgia	3,123,723	3,444,578	320,855	10
Mississippi	2,183,796	2,178,914	-4,882	-0.2
North Carolina	3,571,623	4,061,929	490,306	14
South Carolina	1,899,804	2,117,027	217,223	11
Tennessee	2,915,914	3,291,781	375,877	13

Figure 15A

this decade only California and Arizona showed a higher rate of growth than Florida. Since 1950 Florida's population has been growing at about 100,000 per year.

Three Centuries of Growth. Since white man first entered Florida, the State has had a continuous population increase. This continuing condition can be called a population *trend.* This trend covers the time since Florida was a colony, down to the present.

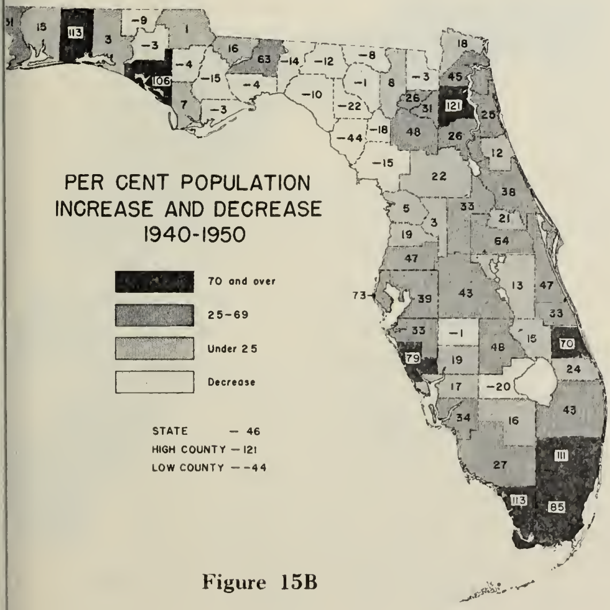


Figure 15B

A PARADOXICAL TREND

You might think that because Florida has increased in population each county in the State has increased too. Determine from Figure 15B if this is true. In what part of the State are most of those counties which showed decreases? When did this area first start growing? Table 1 in the Appendix gives the actual number of people gained or lost in each county. When counties lose people, some of their towns and settlements get smaller or are even abondoned. Later you should be able to find some reasons for these changes in the ways resources were used.

HOW POPULATION NUMBERS CHANGE

Natural Growth. The number of people in a city, county, state, region, or nation rarely remains static. There are several ways in which the numbers of people in a place can change. Among these are the number of children born each year; the number of people dying each year; and the number of people moving into, or out of, a place each year. If nobody moved into or out of a place, its actual population change annually would be the difference between the number of births and deaths.

Often births and deaths, and the difference between them, is expressed in rates. The number born for each 1,000 population is the *birth rate*. The number that died for every 1,000 population is the *death rate*. The difference between the two rates is called the *rate of natural increase*. If a place has a birth rate of 30 and a death rate of 10, what is its rate of natural increase? You get the answer by subtracting 10 from 30.

Look at Figure 16A and tell which southeastern state had the highest rate of natural increase from 1940 to 1950. Which had the lowest? Which was most like the United States? Refer to Figure 15A. Did the state with the highest rate of natural increase have the highest rate of actual population gain? Did the state with the lowest rate of population increase have the lowest rate of natural increase? Which state do you think would have had the greatest population increase if nobody moved in or out? Why do you think so?

RATES OF BIRTH, DEATH, AND NATURAL INCREASE PER 1,000 POPULATION, TEN YEAR AVERAGE, 1940-1949

	Birth	*Death*	*Natural Increase*
United States	22	10	12
Southeast	26	9	17
Florida	22	10	12
Alabama	27	9	18
Georgia	26	9	17
Mississippi	29	10	19
North Carolina	27	8	19
South Carolina	28	9	19
Tennessee	24	9	15

Figure 16A

Migration. Everyone knows that people in the United States move around a great deal. Movement into a state is called *in-migration*. Movement out of a state is called *out-migration*. Florida would have gained 228,000 people between 1940 and 1950 by her rate of natural increase if nobody had moved in or out. It is known, however, that some people left Florida (out-migration). Yet her actual population gain for the decade was 874,000. Therefore, how did Florida get most of her population increase between 1940 and 1950? Of this number Florida actually gained approximately 600,000 by migration during that period.

Find out by comparing Figure 16B with Figure 15B if the Florida counties with the higher rates of natural increase had the higher rates of actual population growth in the last decade. Most of the county losses were caused by out-migration, either to other states or to other counties of Florida.

Questions for Further Study.

1. Why has Florida's population grown so rapidly over the last 100 years? Why is it still growing?
2. Why has the population of some parts of the State grown so much more rapidly than others?
3. Why have some areas actually lost population?

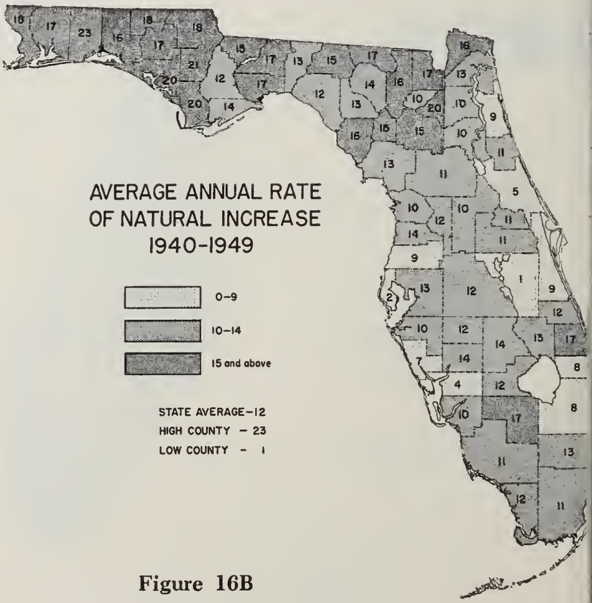


Figure 16B

4. Why have most of the white and Negro in-migrants come from adjacent southern states? Why has the number of in-migrants from northern areas increased in recent decades?

WHO ARE FLORIDA'S PEOPLE?

Where We Were Born. Well over half of Florida's residents came by in-migration from other states. By contrast, most of the people of other southeastern states are residents by birth. The birth places of Florida residents in 1950 and 1940 are shown in Figure 17A. By 1940, had most of Florida's people come from neighboring or distants states? In 1935 the leading seven states of origin of Florida's white people were southern. Since then there has been a marked increase in the number of people coming to Florida from other parts of the Nation.

LEADING EIGHT STATES OF ORIGIN OF NATIVE-BORN AMERICANS LIVING IN FLORIDA, 1950 and 1940

	1950	*1940*
Florida	1,202,100	939,879
Georgia	340,440	282,817
Alabama	152,600	106,716
New York	123,835	51,892
Pennsylvania	84,045	36,275
Ohio	72,625	35,662
South Carolina	54,310	48,304
Illinois	52,285	29,048

Figure 17A

Foreign-born People. In 1950 about 120,000 people living in Florida were born outside the United States. Does this number seem large compared to the total population of 2,771,305? Everyone now living in the United States, except Indians, descended from people born in other countries. All children born on American soil are Americans by birth. Perhaps you know people in your county who were born in other countries. You may know, too, children born in America and Florida whose parents were born abroad. Over half of Florida's foreign-born came from Western Europe or Canada.

Sometimes people from other countries settle in groups or colonies, such as the Greek colony at Tarpon Springs, and Latin American or Puerto Rican communities in Tampa, Miami and elsewhere. Can you name other such settlements from your own experience or knowledge? Most of the people who live in such colonies today were born in America. Many of the migrants into farming areas come from Puerto Rico. Those born in this possession of the United States are American citizens by law.

Perhaps you can see why knowing the percentage of foreign-born does not give a true picture of their contribution to certain communities. While relatively few in numbers they may enrich local life with new ideas and ways of living. Determine from Figure 17B which Florida counties had the largest number of foreign born people in 1950.

LEADING FLORIDA COUNTIES IN NUMBERS OF FOREIGN BORN PEOPLE, 1950

County	Number of foreign Born		
	Total	*Male*	*Female*
Dade	51,755	26,000	25,755
Hillsborough	14,543	7,457	7,806
Pinellas	11,947	5,903	6,044
Palm Beach	6,902	3,439	3,463
Duval	6,119	3,182	2,937
Broward	4,501	2,310	2,191
Orange	3,777	1,793	1,984
Volusia	3,406	1,670	1,736
Polk	2,154	1,118	1,036

Figure 17B

A Melting Pot. People in Florida, as you can see, have come from many different places. They exchange and share their ideas, attitudes, and beliefs and make Florida a "melting pot" for people of many states. As a result Florida's population is often described as "cosmopolitan," which means "belonging to all the world, not local." Does Figure 15B suggest to you which parts of Florida probably have the most cosmopolitan population? Why?

Race Groups. Although Florida's people come from different places, two racial groups are predominant in the State, Negroes and whites. There are also a few American Indians, native Puerto Ricans, Chinese, Japanese and others. Check Figure 18A to determine the change in the per cent of Negroes in the population of Florida, the southeastern states, and the United States since 1930. Which showed the greatest decrease in per cent of Negroes? Which showed both an increase in numbers of Negroes, and a decrease in percentage? Do you understand how this is possible?

NEGROES IN THE TOTAL POPULATION, 1930 and 1950

	PER CENT		*Per Cent Change*	*Change in Numbers*
	1930	*1950*		
United States	10	10	0	3,152,455
Southeast	34	29	–5	384,528
Florida	29	22	–7	171,273
Alabama	36	32	–4	34,783
Georgia	37	31	–6	–8,363
Mississippi	50	45	–5	–23,224
N. Carolina	29	26	–3	128,706
S. Carolina	46	39	–7	28,396
Tennessee	18	16	–2	52,957

Figure 18A

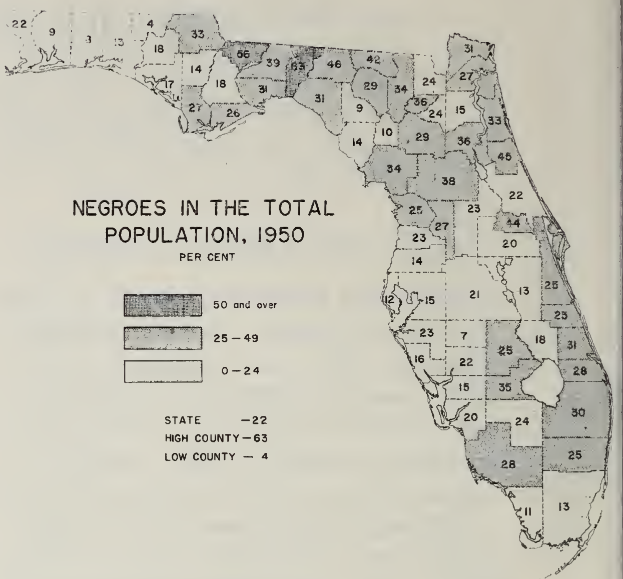


Figure 18B

The percentage of Negro population in each Florida county for 1950 is shown in Figure 18B. The northern counties with marked concentrations of Negroes were part of the plantation system of the Old South. Note that several counties in this area have small percentages of Negroes. As you proceed you will discover reasons for these and other differences in the racial make-up of Florida counties.

City and Country People. You may know that urban centers are towns and

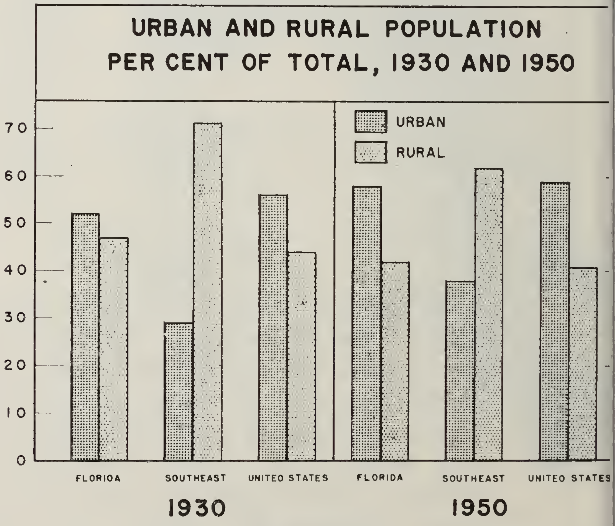


Figure 18C

cities with over 2,500 people. All persons who live in such places are part of the urban populataion. All who do not live in an urban place, even though they may work there, are part of the rural population.

Determine from Figure 18C the percentages of Florida's population that were urban and rural in 1930 and 1950. How do these percentages compare with those of the United States and the Southeast? Can you see an urban or rural trend in the past 20 years that applies to Florida, the Southeast, and the United States? Are you surprised at the present urban-rural differences of these three areas? In the 1950 census another and better definition of urban population was also used. It included as urban people all those living next to cities of over 50,000, but outside of their city limits. The only cities whose suburban people were counted so are Miami, Jacksonville, Tampa, St. Petersburg and Orlando. By this new definition Florida had a population 66 per cent urban; the Southeast 43 per cent; and the United States, 64 per cent. Florida's urban areas have increased in numbers of both white and Negro population.

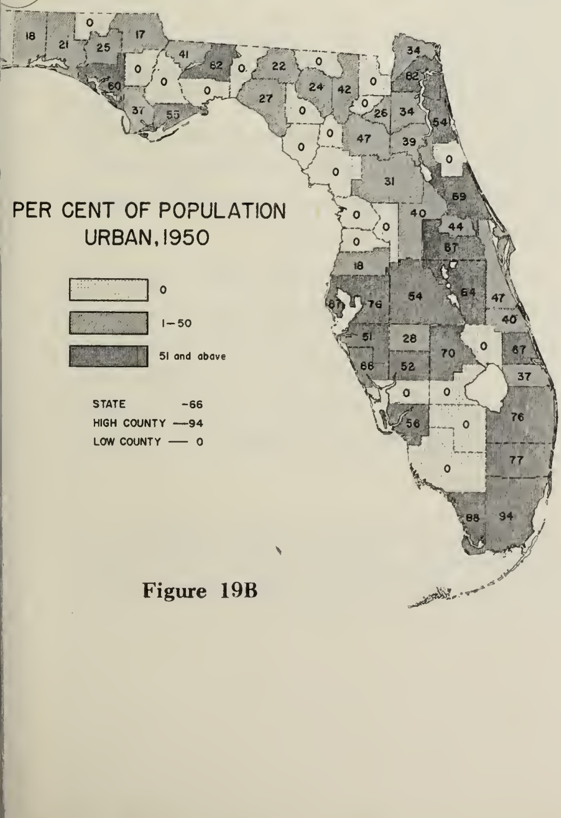


Figure 19B

Largest Cities. As so many of Florida's people live in urban areas, let us now find out which are the State's largest cities. From Figure 19A, work out the percentage of Florida's three million people that live in her 10 largest cities. What cities moved up or down the list during the 10 years covered? Did any of them show an actual decrease in size? Which three cities have over 100,000 people, and which has just under 100,000? No city in Florida has over 300,000 people and no city in the Southeast has over 500,000. As you study, try to find out why a state can have such a large percentage of urban population, yet have no really large cities.

FLORIDA'S TEN LARGEST CITIES, 1940 AND 1950

Cities in Order of Rank, 1950	Population		*Per Cent Increase 1940-1950*
	1950	*1940*	
Miami	294,276	172,172	45
Jacksonville	204,517	173,065	18
Tampa*	124,681	108,391	15
St. Petersburg	96,738	60,812	59
Orlando	53,367	36,736	43
Miami Beach	46,282	28,012	65
Pensacola	43,479	37,449	16
W. Palm Beach	43,162	33,063	28
Ft. Lauderdale**	36,328	17,996	102
Lakeland	30,851	22,068	40

*City boundaries are set by the Legislature. Those for some cities have been enlarged since 1950, thus adding to their populations.

**Fort Lauderdale ranked 11th and Daytona Beach 10th in 1940.

Figure 19A

Urban Centers. Determine from Figure 19B how many counties have no communities with over 2,500 people. There were 27 such counties in 1940. Urban centers have developed in Okaloosa, Gulf, Bradford, Clay and Martin counties in the past 10 years. How many urban centers are there in your county? In which urban percentage range does your county lie?

Which five counties have the largest percentages of urban population?

Rural People. Some rural people live on farms; others do not. In Florida the rural farm population is eight per cent of all the people in the State. By subtracting this from 100 you can determine what part of Florida's population does not live on farms. Does it seem strange to you that in Florida more than 9 out of 10 people do not live on farms? About 35 per cent of our citizens do not live on farms or in urban centers. Do you know of any small settlements of such *rural non-farm people*?

Age Groups. Age groups are distributed as unevenly throughout the State as racial groups and numbers of people. The percentage of the population in various age groups differs also among states. How do Florida, the Southeast and the United States compare in their percentages of population by age groups as shown in Figure 20A? Which has the greatest per cent over 65? Which the greatest between 21 and 44?

It is well known that the number of people over 65 in Florida has been increasing. This increase has been limited largely to central and south Florida, due mainly to the fact that older people choose places with a warmer climate to live when they retire. Their needs, in housing, recreation, medical care, etc., differ from those of other age groups. Government agencies have made studies of those needs, seeking solutions to the problems of older people.

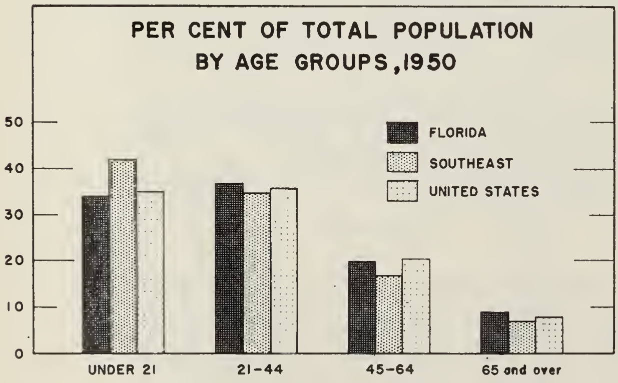


Figure 20A

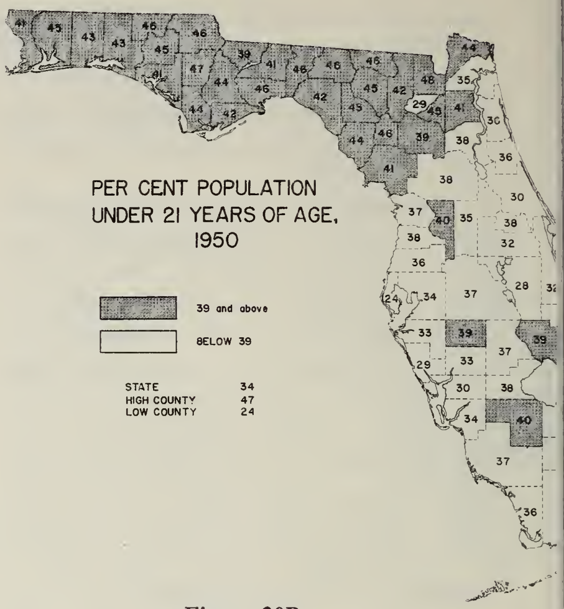


Figure 20B

A fact not so well known is that the numbers of people in Florida between the age of 21 to 44 also has been increasing greatly. This group is important because it contains the largest percentage of people who work and make livings for themselves and their families.

Find from Figure 20B which parts of Florida have the highest percentages of people under 21. How are the cost of education and the number of workers in a county affected if many of the people are under 21? As you continue your study, find a more complete answer to this question, as well as others you have already listed.

*** EXPLORING FOR YOURSELF—You may wish to find out what happened to the number of people in your city and county from 1940 to 1950. Have any changes occurred since 1950? What reasons can you find that help explain these changes?

PROSPECTS FOR THE FUTURE

How many people will live in Florida 10 years from now? Twenty years from now? In the year 2000? These are questions that cannot be answered for certain. However, some things are fairly clear. If Florida continues to provide new opportunities for people to make a living, the population of the State may continue to grow. If resources are mis-used and opportunities destroyed, some people may decide to move to other places. As your study continues, try to discover some of the factors that are likely to cause future population changes.

Questions for Further Study.

1. Why do some parts of Florida have a cosmopolitan population and others not?
2. Why is the population of a state with so few large cities over half urban? Why is Florida's population increasingly urban? Why have those increases been in both Negroes and whites?
3. Why does one-third of Florida's population live in her 10 largest cities?
4. Why have 22 of Florida's 67 counties no urban population?
5. Why does Florida have a higher percentage of old people, and a smaller percentage of children, than other southeastern states? A higher percentage of people from 21-44 years of age?

Chapter 3

Making a Living in Florida

How many members of your family work and earn money? How many go to school? What do the others do? Compare answers to those questions with your classmates. Is it not clear that the gainfully employed people are supporting the home makers, the young people that go to school, and persons unable to work? Most persons do not work at full-time jobs until they are at least 14 years old, and many of them not until several years later. In 1950 only 49 per cent of all civilians 14 years of age and older in the State of Florida were gainfully employed.

INDUSTRIES THAT USE NATURAL RESOURCES

For what six industries does Figure 23A give information? The kinds of work shown are called basic industries, because they use natural resources to create such wealth as farm crops, fertilizers, buildings, and manufactured articles. How do these industries rank in the United States according to the per cent of people employed in each? Compare the ranking of these industries in Florida with the Nation, the Southeast, Mississippi, and Alabama. What changes have occurred in Florida between 1940 and 1950?

From Figure 23B determine in which parts of the State there are groups of counties with more than 50 per cent of their workers employed in basic industries. Can you give any reasons?

Another Measure of Basic Industries. The importance of the basic industries may be judged not only by the workers they employ but also by the total value of their products. How did Florida's basic industries rank in this respect in 1950 (Figure 23C)? What important changes have occurred since 1940? Perhaps you have heard grownups say that a dollar is

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*** EXPLORING FOR YOURSELF—How do the people you know earn their livings? In what kinds of employment are most of the working persons in your county? You may want to check your ideas against the facts in Table 2 in the Appendix.

EMPLOYMENT BY BASIC INDUSTRIES

Industry	Number of Workers		Per Cent of All Employed Workers					
	Florida		*Florida*		*South-east*	*Ala-bama*	*Missis-sippi*	*United States*
	1940	*1950*	1940	1950	1950	1950	1950	1950
Agriculture	117,024	123,194	17	12	24	24	42	12
Manufacturing	80,033	108,325	12	11	21	22	13	26
Construction	44,046	90,528	7	9	6	5	5	6
Forestry and Fisheries	12,419	10,880	2	1	*	*	*	*
Mining	2,612	5,302	*	1	1	3	1	2
Totals	256,134	338,229	38	34	52	54	61	46

*Less than half of one per cent.

Figure 23A

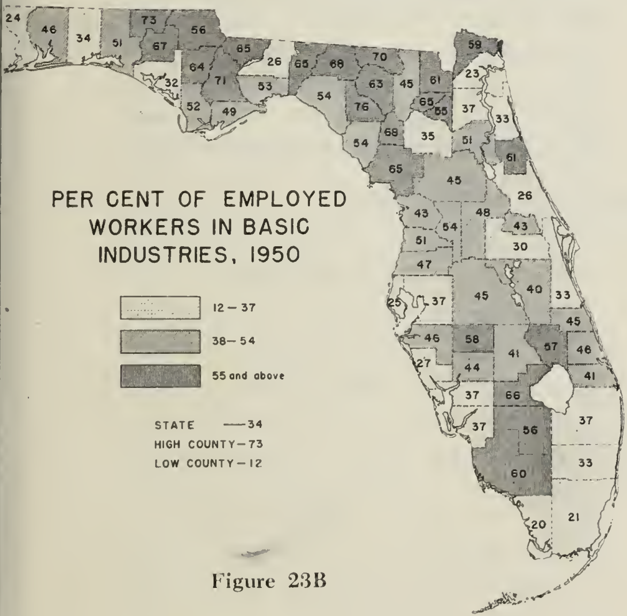

Figure 23B

ANNUAL VALUE OF PRODUCTION BY BASIC INDUSTRIES (ESTIMATED)

Industry	Millions of Dollars	
	1950	*1940*
Construction	532	99
Farming and Grazing	518	136
Manufacturing (value added by*)	449	118
Mining	68	16
Forestry	66	29
Fishing (Commercial)	16	5
Totals	1,660	403

*Values of finished products less cost of raw materials (previously produced in other basic industries).

Figure 23C

worth less and will not buy as much as a dollar did in 1940 or earlier. Ask your teacher and your parents for examples. This decrease in the value of the dollar is called *inflation.* Almost half the increase in values between 1940 and 1950 shown in Figure 23C are due to inflation. Compare for 1950 the ranking of the basic industries in Figure 23C with the ranking by per cent of workers employed (Figure 23A).

Some Questions About Basic Industries. Did the information in Figures 23A and 23C suggest the following questions to you? You may be able to answer some of these questions partially now.

1. Why does Florida have a lower percentage of workers employed in basic industries than Georgia and Mississippi?
2. Why do construction, farming and grazing, and manufacturing rank as high as they do in workers and in value of product?
3. Why do mining and forest industries and fishing rank so low?
4. Why have changes occurred in the value and ranking of basic industries in Florida since 1940?
5. What resources of the State are used in each of these industries?
6. Does anything you have learned about changes in Florida's population help you to understand questions 3 and 4?

Keep these questions in mind and try to find more complete answers as you study each industry later.

INDUSTRIES THAT RENDER SERVICE

The table in Figure 24 shows the per cent of employed persons in eight other industries. Find the item called personal service. These workers are servants in homes, and workers in hotels, laundries, barber shops and beauty shops, and many other establishments. Of the others shown in Figure 24 many work in stores or shops, selling such goods as food, clothing, souvenirs, and furniture (already produced by workers on farms and in forests, mines, and factories). Other service workers provide communication, transportation, housing, and amusement. Professional service is that given by such persons as doctors, lawyers, and teachers. Workers in public administration or government include employees of post offices and various State departments in Tallahassee, and city and county officials.

How does Florida compare in service industries in 1950 with the Nation and with the other two states shown? What

EMPLOYMENT BY SERVICE INDUSTRIES

Industry	Number of Workers		Per Cent of All Employed Workers					
	Florida		*Florida*		*South-east*	*Ala-bama*	*Missis-sippi*	*United States*
	1940	*1950*	1940	1950	1950	1950	1950	1950
Wholesale and Retail Trade	139,231	240,311	21	24	16	15	13	19
Personal Service	115,676	122,121	17	12	9	9	8	6
Transportation, Utilities and Communications	45,324	78,707	7	8	6	6	4	8
Professional Service	43,993	81,110	7	8	7	7	6	8
Public Administration	21,942	51,959	3	5	3	4	3	4
Finance, Insurance, and Real Estate	20,811	38,157	3	4	2	2	1	3
Business and Repairs	12,876	27,586	2	3	2	2	2	3
Entertainment and Recreation	10,348	15,026	2	2	1	1	1	1
Totals	410,201	654,977	62	66	46	46	38	52

Figure 24

changes have occurred in Florida since 1940? Note that adding the per cent of total workers in service industries in Florida for 1950 from Figure 24 to the per cent of the total workers in basic industries (Figure 23A) will give you 100 per cent, or all of the workers of the State.

Service Workers by Counties. Workers not employed in basic industries are employed in service industries. Figure 23B shows that of the 100 per cent of the workers in Lafayette County, for example, 75 per cent are employed in basic industries. What per cent does that leave for service industries? By this method determine from Figure 23B which counties have over half of their workers in service industries. In what parts of the State are most of these? Can you give reasons? How does your county rank? Why?

An Important Question. These employment tables should make clear an important difference between Florida and the two other states. This difference raises the question: Why are nearly two-thirds of Florida's workers employed in service industries, a greater per cent than that of other southeastern states?

Perhaps you have already guessed that the major reason is that Florida has a large tourist industry. Tourists want and are willing to pay for many of the kinds of services shown in Figure 24. The importance of this industry can be judged not only by the large number of workers employed in service occupations, but also by the income it produces. Accurate records cannot be kept of all money spent by tourists, but the best estimates indicate that they spend from $700,000,000 to $900,000,000 in the State each year. How does this amount compare with that given for each of the basic industries in 1950 (Figure 23C)? How does it compare with the total for all these industries in 1950?

Perhaps you can give some reasons for the large tourist industry in Florida. You will find additional ones in a later chapter.

THE INCOME OF FLORIDA'S PEOPLE

The incomes people earn depend in part on the kinds of work they do. Rural workers usually receive lower cash incomes than urban and rural non-farm workers. In 1949 half of Florida's families had incomes below $2,384 and half of them incomes above that amount. The term *median* is used to describe the figure occupying this mid-point, in this case $2,384. This median income for the State compared with $3,073 for the nation. No other southeastern state had a median income above $2,150.

The largely urban manufacturing and commercial states of the Northeast have higher incomes than agricultural states anywhere in the Nation. The work of industry and commerce usually is done in towns and cities. Do these facts help you to understand why Florida incomes are higher than those of other southeastern states? Florida has a high per cent of urban population but is not a great manufacturing State. Do these facts help to explain why Florida's income is below that of the northeastern states or of the Nation?

Find from Figure 26:

1. How many counties have incomes above the median? How many more have incomes above $2,300? Which part of the State has the largest number of counties with low incomes? Can you suggest any reasons for the differences?
2. Which part of the State has the most counties with incomes above or just below the median? Can you suggest any reasons for the differences?
3. How many counties have annual incomes above the national median?

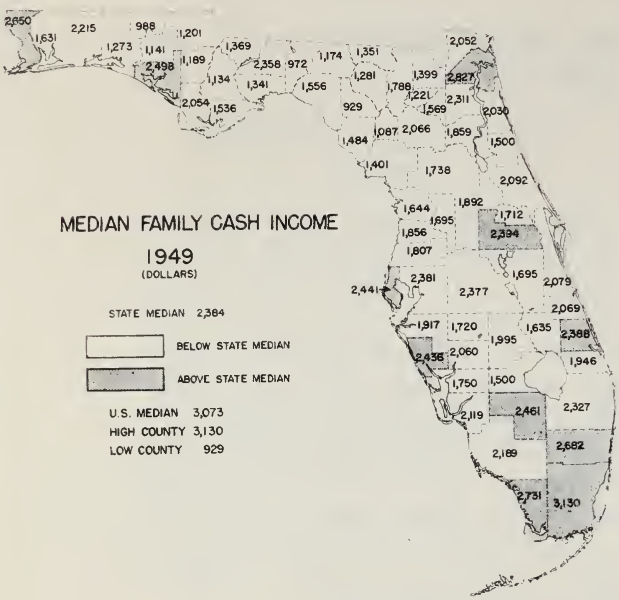

Figure 26

4. Any counties that are higher or lower than you might have expected.

As you continue your study of Florida's industries, look for reasons for these differences in income.

You probably noticed that Leon County in North Florida has a higher income than most of its neighbors. That is not hard to understand if you remember that Tallahassee is the capital of the State and has Florida State University and Florida Agricultural and Mechanical University. Workers in government and education are paid from funds collected as taxes from all over Florida. Some of these workers have had special kinds of education to prepare them for their jobs and receive slightly higher incomes than the people in nearby rural counties.

The high income in Hendry County is not so easily explained. Two facts may help. The high incomes of ranchers and large sugar corporations bring up the median for a small total population. The lowest paid workers are migrant labor, not counted as resident population in determining median income for this and other counties.

*** EXPLORING FOR YOURSELF—Urban centers usually have more service workers than rural areas. From Table 2 in the Appendix make a graph showing the per cent of workers in your county employed in the various kinds of work shown.

1. Can you give any reasons for what your graph shows? Are there more rural or urban workers in your county? What natural resources are used most?
2. Compare your county with other Florida counties.
3. What kinds of jobs are most likely to be available in your county when you and your classmates grow up?

**** EXPLORING FOR YOURSELF—

1. Find from Figure 26 the five high counties and the five low ones. Compare these with your own. Can you give any reasons for the rank of your county?
2. Ask your teacher to help you compare Figure 26 with Figures 10B, 15B, 19B, and 20B in Chapter 2 and to find some reasons for the differences and similarities.

Chapter 4

Using Florida's Land: Man and the Land

MAN'S DEPENDENCE ON LAND

Perhaps you have heard the Greek myth of the giant wrestler whose strength was renewed every time he touched the earth. Hercules was able to overpower him only by holding him off the ground.

Modern man, too, derives his strength from the earth. All of his food and many other materials necessary to modern living come from animals and plants which are nourished by the productive top layer of soil. This thin life-giving layer averages only one foot in depth over most of the earth and is much less in many places.

In the United States today, many people live in towns and cities and buy their food and everything else they need in stores and shops. Since these people do not work on the land, they sometimes forget that they, too, derive their strength from the earth.

Minerals, which also come from the earth, are highly important to modern man. In this book their use will be treated in a later chapter because they usually come from rock deposits well below the thin surface layer of productive topsoil with which we are here concerned.

How Much Good Land is There? If the earth's entire surface of 36 billion acres were usable, securing a living for the nearly 2½ billion people who live in the world would not be so difficult. But half of the area of the earth is completely unsuited to cultivation. It is composed of great deserts, high mountains, and vast cold lands near the poles, some of them constantly covered with snow and ice.

The other half of the earth's surface

*** EXPLORING FOR YOURSELF—You might try listing the kinds of food and other materials from the soil upon which you and your family and friends are dependent.

contains all the cultivable land; within it also are areas that are too hilly, too stony, too salty, too dry, or too wet. At present roughly only 10 per cent, or about four billion acres of the entire surface of the earth, is cultivated. Perhaps somewhat more than one billion acres of land in the tropics and in sparsely settled parts of Canada, Alaska, and Eurasia can be productive. Thus we see that the amount of good land in the world is limited.

HOW NATURE CREATES PRODUCTIVE LAND

When white men first came to North America they found fine forests growing on the lands near the eastern seaboard. Later, as they explored and moved out over the other parts of the continent, they discovered that forests were of many kinds and that great areas of grasslands extended from Canada to Texas. They found desert lands with special kinds of vegetation, swamps containing trees, and marshes in which grasses grew.

So vast were the productive parts of this great continental landscape as compared to what the people had known in Europe that they felt very rich. They thought there was no end to their new natural wealth.

These people did not understand that the vegetation they looked upon was the product of a long, slow process taking nature millions of years to complete. Only recently have modern scientists fitted together the facts from several different sciences to make the process more understandable.

A Long, Slow Natural Process. It is very difficult to tell in a few words what these scientists have discovered. You will have to use your imagination to help you understand. Perhaps you can imagine our earth early in its history with lands and seas, but with no plant and animal life. The lands on this earth were composed largely of rock and coarse, broken rocky materials. The earth then, as now, had a variety of climatic conditions differing from place to place. Sun and rain and heat and cold acted on the earth's surface changing it slowly until finally tiny, simple, scale-like plants and small weeds appeared. These plants attached themselves to rocks or other earth materials. They took energy from the sun and stored it. As the plants grew old and died, their remains decayed and added valuable materials to the top layer of the earth.

Gradually this top layer was changed enough so that new forms of plant life could grow in it. These plants had strong roots that penetrated the top layer and the porous or cracked rocks, letting in more air and water. They could reach farther for the mineral substances needed for growth. These plants, then, also changed their environment. Each time the conditions of the top layer were improved, larger and more highly developed plants appeared and crowded out the earlier pioneers that preceded them.

At each stage of change in the earth's surface, types of animal life suited to living in the changed environment appeared. These animals contributed also to changing the earth. Some of these forms of life are invisible bacteria. They live and work on the remains of dead plants and animals, changing them into a dark, rich material called *humus.* Humus adds greatly to the fertility of the top layer of the earth.

Land covered by vegetation that has developed a good supply of humus in the soil holds rain water like a sponge and slowly releases it to make streams and springs flow clear and even throughout the year. Plants and animals are thus provided with a constant supply of water. If plants and humus are absent, rain water rushes downhill, wearing away the soil and flooding the streams with mud-laden torrents. In dry periods the earth becomes parched and hard, streams shrink in size, and springs go dry.

Animals contribute in various ways to making and keeping the earth a good place for life. For example, birds and squirrels carry seeds and nuts, earthworms tunnel and allow air to enter, and bees and other insects help to pollinate flowers. Some animals live on plants and some on other animals. Thus plants and animals become dependent on one another.

The End Product. Thus we see that through countless centuries of changes the raw earth materials of rock, clay, and sand have become soil. Many generations of plants and animals working together have used air, water, the sun's energy, earth minerals, and the remains of their dead to create conditions suitable to higher forms of life, including man.

The condition created by plants and animals in which soil and plant life are at their richest and water is controlled by humus is called a *climax*. Another term used to describe the highly successful working together of plants, animals, water, and soil is *balance of nature*. The following two *Encyclopedia Britannica* films show very well nature's process of building soil and the ease with which man can destroy the natural balance:

"The Strand Grows"
"A Strand Breaks."

Many Kinds of Climaxes. Vegetation is the most easily seen sign of climax conditions. You probably remember from your earlier studies the white pine forest of the Northeast, the prairies of the Great Plains, and the fir trees of the Northwest. Of course you are familiar with the yellow pine forests and other kinds of vegetation in your own state. The most important reason for these great differences in vegetation is differences in temperature and rainfall. You know that palm trees do not grow in Maine, nor spruce and fir in Florida. The dry regions produce less vegetation and the wet ones more. Plants adapt themselves to climatic conditions and available earth materials and together with animals slowly create a climax.

Man as an Upsetter of Balances. The various climaxes that are so slowly and so well worked out by nature, unfortunately, are very easily and quickly upset by man. Had white man in early America known what we know now about climaxes, he might have treated the land better. It is well to remember, however, that in order to live on the earth man must use resources. His problem is to get what he needs from land without destroying the balance of nature and creating serious problems for himself. You will recall from Chapter 1 examples of wise and unwise use of land and other natural resources.

There are several excellent films that show dramatically the results of man's upsetting the balance of nature. *The River* is perhaps the best film of this type.[1]

Man can make use of any new area on the earth in one of several ways. He can cut the trees to secure materials to meet his needs, he can pasture animals on the native grasses, or he can plow the cleared ground to make fields for planted crops and pastures. If he cuts all the trees and allows fire to burn over the land, precious humus is destroyed and the soil loses both fertility and power to hold water. On slopes erosion sets in. If he pastures too many animals on the grasses, they are unable to hold the soil, and wind and water wear them both away. If the land is cleared and the same crop harvested from it year after year, it loses its fertility. If slopes are planted to rows of crops with open space between, erosion removes the valuable top soil.

By these practices which work against

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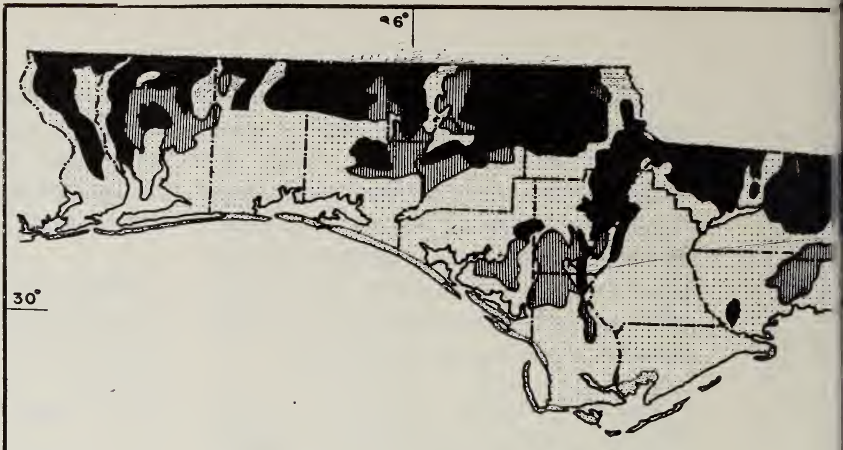
[1] If *The River* is not in your county film library, it can be secured through the Soil Conservationist in your area.



KINDS AND USES OF FLORIDA LAND*

	NATURAL FERTILITY	SOIL TYPES	DRAINAGE	MOST SUITABLE USE
■	GOOD	SANDY CLAY LOAM	GOOD	GENERAL FARMING, SOME SPECIAL CROPS
▥	FAIR	SANDY LOAM	GOOD	
▒	POOR	SAND	GOOD	SPECIAL CROPS
▧	GOOD	MUCK, MARL	MUCK-POOR MARL-GOOD	TRUCK CROPS
⁙	POOR	MOSTLY SAND	VARIED	FORESTS GRASSES
░	POOR	WHITE COASTAL SAND	MOSTLY GOOD	RECREATION

*GENERALIZED FROM "LAND CLASSIFICATION MAP" PREPARED BY THE LAND USE PLANNING SECTION OF THE RESETTLEMENT ADMINISTRATION, LAND UTILIZATION DIVISION, REGION V.

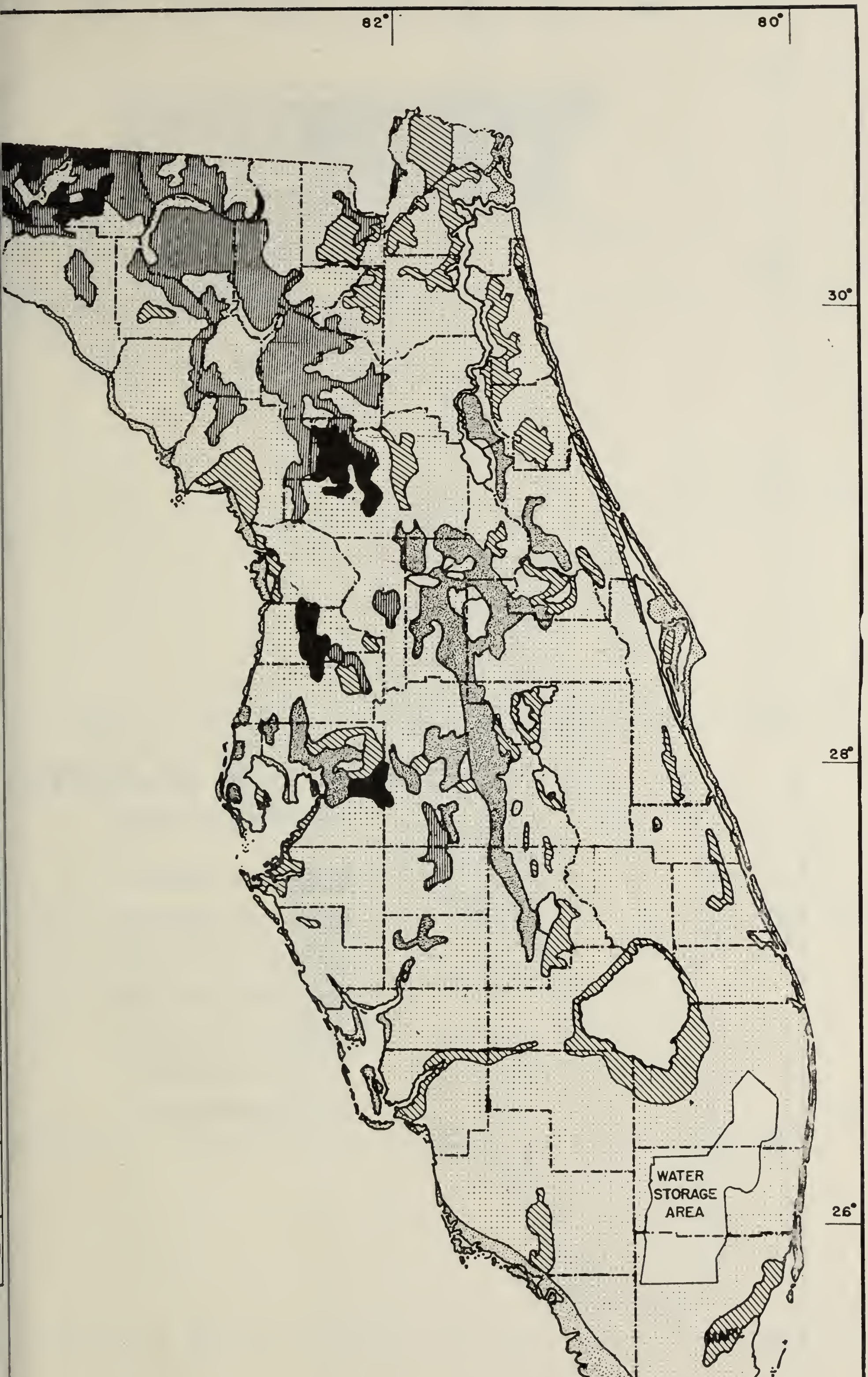
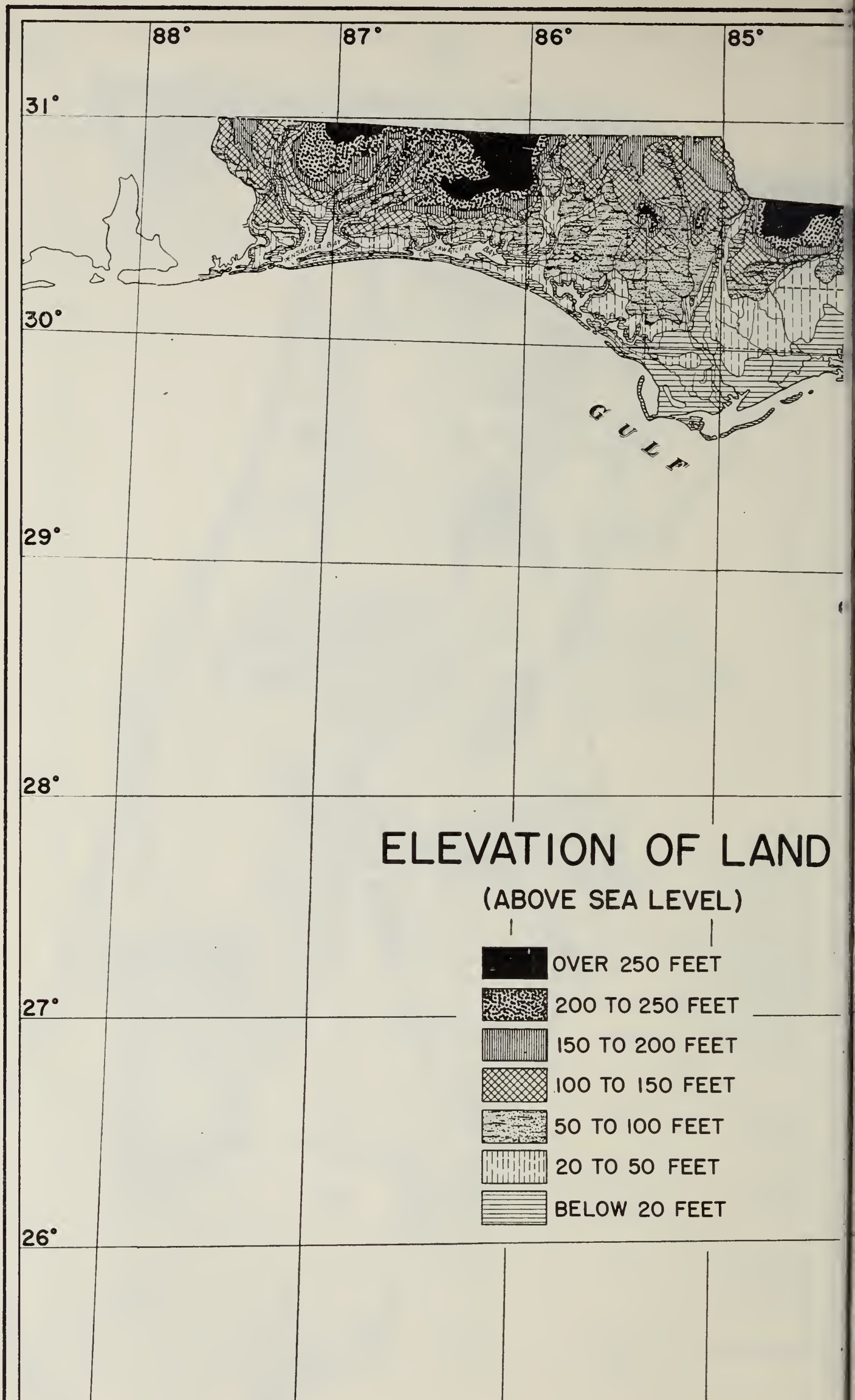


Figure 31



ELEVATION OF LAND

(ABOVE SEA LEVEL)

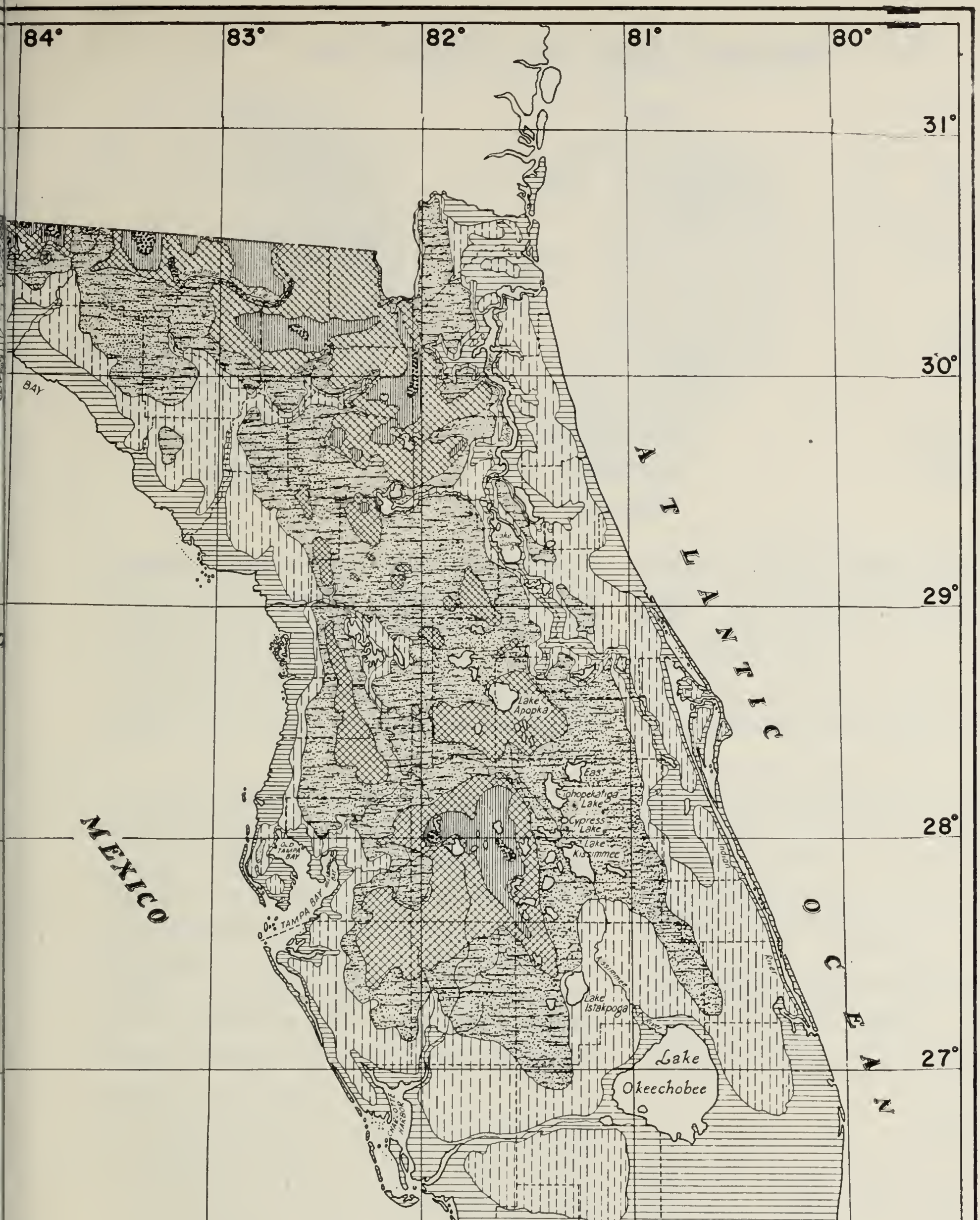

84°
83°
82°
81°
80°
31°
30°
29°
28°
27°
26°
25°
BAY
ATLANTIC
OCEAN
MEXICO
Lake Apopka
East Tohopekaliga Lake
Cypress Lake
Lake Kissimmee
Kissimmee
Lake Istokpoga
Lake Okeechobee
OLD TAMPA BAY
TAMPA BAY
CHARLOTTE HARBOR
Indian River
Biscayne Bay
FLORIDA BAY
4°
83°
82°
81°
80°

Figure 33

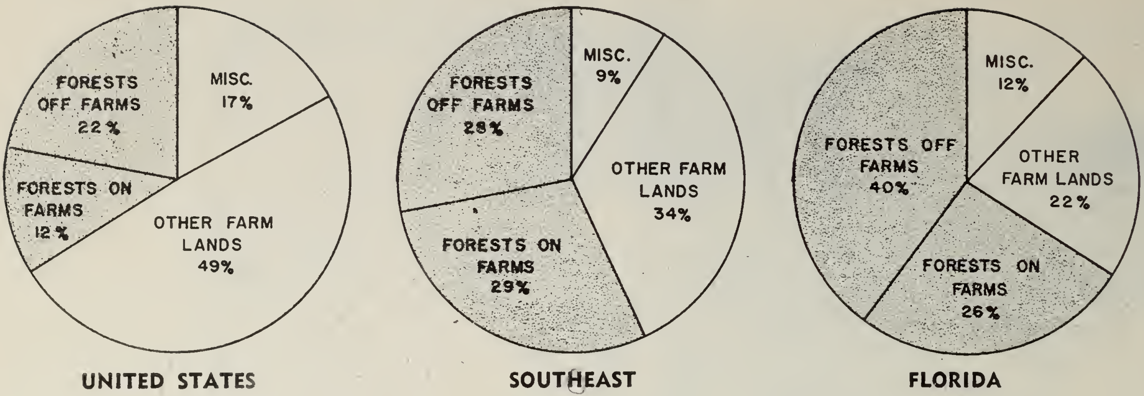

MAJOR LAND USES, 1950

Figure 34

nature man may make money from the land for a short time. But sooner or later the damage done by destroying the balance of nature shows up in smaller and poorer crop yields, in undernourished animals, and in poverty for the people on the land.

To secure a living, man often must upset the balance of nature. But he can work with natural forces to create a new balance. When he does so, steep slopes are used only for trees and grasses which hold soil and water. Fertility is maintained by rotating crops, by fertilizing land, or by plowing under certain soil-building plants. Good pasture grasses are planted and the number of animals pastured on them is controlled.

As you study the next few chapters, find out whether in using Florida's land people have *worked with nature* or *worked against nature.*

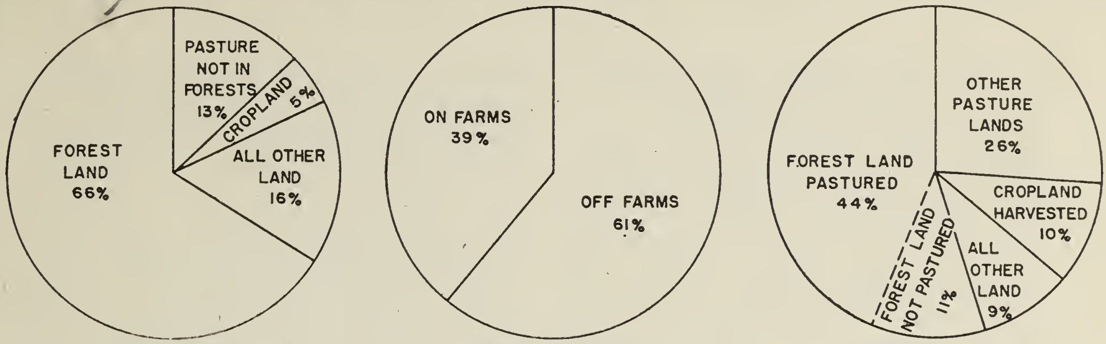
HOW FLORIDA'S LANDS ARE USED TODAY

Importance of Florida's Lands. Compute from Figure 23C in Chapter 3 how the 1950 value of products from land—farms, ranches, and forests—compared with the value of products of each of the other basic industries. From Figure 23A find out what portion of the workers of the state these uses of land supported in 1950.

Kinds of Land in Florida. The kind of plant growth produced by nature suggests the kind of climax that has been reached in any area. Perhaps you can imagine how the land of Florida looked when much of it was covered with fine tall pines and other trees. This uncut *virgin forest* was better than the best you can see in Florida today.

Unfortunately little of Florida's soil was ever very fertile. Much of the land is sandy and porous. Water from the heavy rainfall of 50 to 60 inches per year soaks rapidly down through such soil, dissolving mineral plant foods and carrying them below the reach of plants. This process is called *leaching.* Florida is a hot, as well as a wet region. Heat and moisture speed up rates of decay and growth. Instead of a deep, dark layer containing much humus, the top soil is shallow and light colored. The conditions seem to favor some kinds of forests, and trees grow rapidly on many acres. When these forest lands are cleared, they often make poor farms. Find in Figure 31 the large amount of land shown as best suited to forests or grasses. On the poorest lands, even trees grow very slowly. You surely have noticed white beach sands with no vegetation to speak of (shown in Figure 31 as suited only for recreation), and other light colored sands with very little plant growth. The less sandy soils in the "red clay" hills of north Florida and the muck lands of the Everglades and other areas are the most fertile soils in the state. Find these areas on the map in Figure 33 and in Figure 31. Soils with a

MAJOR USES OF FLORIDA LAND, 1950



ALL LAND
34,727,680 Acres

FOREST LAND
23,046,000 Acres
66% of Total Land

FARM LAND
16,727,536 Acres
48% of Total Land

Figure 35A

greater clay content leach less rapidly. Muck lands develop in low, wet spots where plant life gows rapidly and adds much humus to the soil.

Most of Florida's lands have proved difficult to use wisely. As you study the next few chapters you will learn how and why some land-use problems developed.

How Florida Land Is Used. From the graphs in Figure 34 you can compare for Florida, the Southeast, and the Nation the amounts of land used for forests, farms, and other purposes.

The graphs in Figure 35A show in more detail how Florida's land is used. Check the following summary statements by consulting these graphs.

1. About 2/3 of all Florida's land is in forests. Only 1/20 of the total is planted to all crops, including citrus, vegetables, corn, etc.
2. About 3/5 of all forest land is off farms and nearly 2/5 on farms.
3. Farms occupy nearly half of all Florida's land. Only 1/10 of the farmland is planted to crops. Forest land occupies 5½ times as much land as crops. Forest pasture and other pasture together occupy about ⅜ of the farmland.

As you study the next few chapters, try to find out why Florida's lands are used as they are and whether they are wisely or unwisely used.

WHO OWNS FLORIDA'S LANDS

You probably know that some of Florida's land is owned by the State, some by the federal government, and some by private owner.

Figure 35B shows how Florida's land was owned in 1949.

OWNERSHIP OF FLORIDA LAND, 1949

	Thousands of Acres	*Per Cent of Total*
Total Land Area......	34,479	100
Privately Owned Land	30,147	87
Publicly Owned Land	4,332	13

Figure 35B

As you study the other chapters on land use, try to find out (1) Why some land is publicly owned, and (2) How publicly and privately owned lands are used to support Florida people.

*** EXPLORING FOR YOURSELF—Your county agricultural agent or soil conservationist in your county can help you find out how the land in your county is used. Does the land-use picture in your county resemble that of the State or differ from it? Can you find out why?

Chapter 5

Using Florida's Land for Forests

VALUE OF FORESTS

In Chapter 4, "Man and the Land," you learned that 66 per cent of Florida's land is in forest. How important are these forest lands to our State? Answers to this question will differ according to the way people think about the forest. The mill owner will think in terms of the logs or cords of wood for his mill. The building engineer will think of the lumber, veneer logs, piling, poles or crossties for construction. The manufacturer will value the forest as the source of important raw materials. The editor will think of the trees to provide his newspaper with newsprint. The farmer will think of fuel and fence posts and the effect of the forest on soil, water and weather — factors determining the success of his crops. The sportsman will think of the forest mainly as a place to fish and hunt. The banker and storekeeper will think of the pay checks of the people employed in forest industries, of the cities that grow up around factories, and of opportunities for investment. The nature lover will see the beauty of the trees and the clear forest streams.

ESTIMATED VALUE OF FLORIDA FOREST PRODUCTS DELIVERED AT PROCESSING PLANTS, 1950

	Millions of Dollars	*Per Cent*
Sawlogs................	22	33
Pulpwood..............	22	33
Gum for Naval Stores....	5	8
Veneer Logs............	5	8
Pine Stumps............	4	6
Fuel Wood.............	2	3
Other Forest Products...	6	9
Total..........	66	100

Figure 36

*** EXPLORING FOR YOURSELF—Ask representatives from federal and state agencies concerned with soil, forest and wildlife to help you learn more about the value of forests.

Figure 36 shows the value of crude products delivered at the sawmill, the turpentine still, or other processing plant. What three products are the most valuable?

Look back to Figure 23A. What per cent of the workers in basic industries are employed in forestry and fisheries? More than half of these are forest workers. This includes only the people who work in the woods. Others who help to transport forest products or work in wood-using industries are classed as manufacturing or transportation workers. In a later chapter you will learn more about what forests mean to Florida's manufacturing industry.

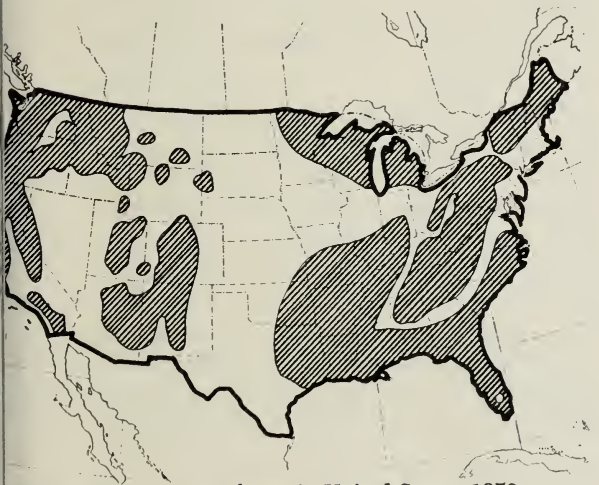


Figure 37A — Virgin forest in United States, 1850

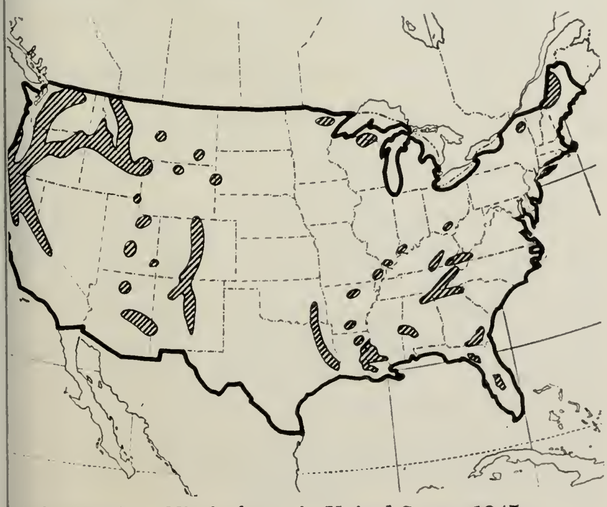


Figure 37B — Virgin forest in United States, 1945

WHAT HAS HAPPENED TO FLORIDA'S FORESTS

In the discussion of "Man's Dependence on Land" (Chapter 4) you learned the meaning of the term, virgin forest. Compare Figures 37A and 37B to see the change in the nation's virgin forests between 1850 and 1945. What happened to Florida's original forest growth during that period.

Farming. Early Americans did not recognize all the values of the forest. They needed land for farming. Since there was no machinery to help prepare "newground," the simplest and most commonly accepted way was to burn down trees. So farmers burned millions of acres of rich forest land. In the Southeast cotton was the principal crop for which land was cleared. Since cotton was grown only in the northern part of the State, little of Florida's forests was cut at that time.

Lumbering. As the population of the United States increased, there was a growing need for wood for fuel, for building homes, for making furniture and for other purposes. Lumbering began in New England. It moved westward with the tide of settlement, and the forests of Michigan, Wisconsin and Minnesota were cut. There were few trees on the great plains west of the Mississippi River, but there were rich farm lands, and villages and towns sprang up there. Lumber to build these towns was shipped from the mills in the Lake States; and, as the forests of that area were cut, the saw mill companies moved down the Mississippi and began to cut the great pine forests of the South. Today only patches of the South's virgin forests remain. The Nation's remaining stands of original timber are to be found in the Pacific Northwest (Figure 37B). Most of the forests today are second or third growth and do not supply the large, straight trees that come from virgin forests.

The depletion of virgin forests was accelerated by the great improvements in the methods and tools used in logging and milling. In the beginning, logs were hauled or dragged by oxen or horses to the river bank. Then they were floated down river to the sawmills, which were usually operated by water power. The mills were equipped with straight-bladed saws that worked up and down like a carpenter's hand saw. About 80 boards a day were all that such a saw mill could cut.

When steam was applied to the forest industries, power machines were developed for logging and milling. Lumber companies built their own railroads into the forests. The inefficient, straight-bladed saw was replaced by the circular saw and by the modern bandsaw. With the invention of the gasoline engine, such equipment as tractors and trucks was developed, and logging and milling underwent further changes. Each change increased the output from individual mill and the drain on the forests.

In the early days pine trees were cut high from the ground because the lower part of the tree, heavy with pitch, would not float. Only the straight trunks of trees were used. The unused branches, called slash, were left scattered about, creating a fire hazard. Fire and the process of dragging out logs destroyed young trees.

Naval Stores. The tar, pitch, turpentine and rosin from long-leaf and slash pine trees are called naval stores. This term came into use in the days of wooden ships, when an important part of each ship's stores was the pitch used for making the vessel watertight and the tar used to keep ropes from rotting quickly in salt water. Today, naval stores are used in making paints, medicines, soaps, disinfectants, plastics and other products, and also in many industrial processes.

The naval stores industry came southward with lumbering into Georgia and Florida. The early methods of turpentining so weakened the trees that their growth was stunted and they were easily blown over by winds or became prey to insects or disease. Fires set to keep down undergrowth destroyed young trees and killed or injured others. Trees that had been worked for turpentine several years often died. If they lived and were cut they did not produce as much high grade lumber.

Range Cattle. Pioneers in Florida took advantage of the great unsettled areas of forest and grasslands to graze cattle. Throughout the State cattle roamed free in the woods or on the prairies. Almost every settler owned some cattle, and many herds were built up to graze on lands that did not belong to the cattle owner. The idea developed that to get fresh, green grass for the cattle it was necessary to burn the woods periodically. It was thought, too, that burning kept down undergrowth so that cattle could be hunted more easily in the spring round-up for marking calves and the fall round-up of beef cattle for market. So cattle owners, like naval stores operators and others, set fire to the woods. There was little or no effort to protect the forest. Young trees were destroyed and older ones stunted in growth; trees that had been boxed and chipped for naval stores caught on fire and were often ruined for any further use. It is estimated that in 1926 at least 75 per cent of the pine land in Florida was burned over annually and that not more than 10 per cent ever escaped fire for three years in succession.

While lumbering, turpentining and cattle raising were reducing the virgin forests, they were also helping to develop frontier Florida by attracting people into the state, stimulating the building of towns and railroads, providing employment and developing capital for further investment. Jacksonville, Pensacola, Cedar Keys, Palatka, Panama City and other towns made rapid growth.

Government Policies. Another factor in the loss of Florida's forest was unwise tax and land policies. Great tracts of timber land owned by either the federal or state government were sold to lumbermen for low prices. Lumber companies moving into these wild, undeveloped areas had to build their own towns, roads, railroads, and their own docks where necessary. To these costs and others were added rising land taxes. As a result, the early companies adopted a program of harvesting the best timber just as rapidly as possible. When this was cut they salvaged as much of their equipment and buildings as they could and moved on to new places, abandoning the cut-over land. At one time about 12 million acres, or more than half of Florida's forest area, were tax delinquent.

Some Results of Depleting the Forests. The unwise use of Florida's original forest resources resulted not only in millions of acres of unproductive land, but also in reduced volume of forest products. When the sawmills began to locate in the Southeast about 1870, most of Florida's virgin forest was still untouched. Lumber production increased steadily and rapidly to reach a peak in 1910. Figure 39 shows what has happened to lumber production since then. How many years were required for Florida to reach the peak of its lumber production? About what year did its lumber production begin to show a definite decline?

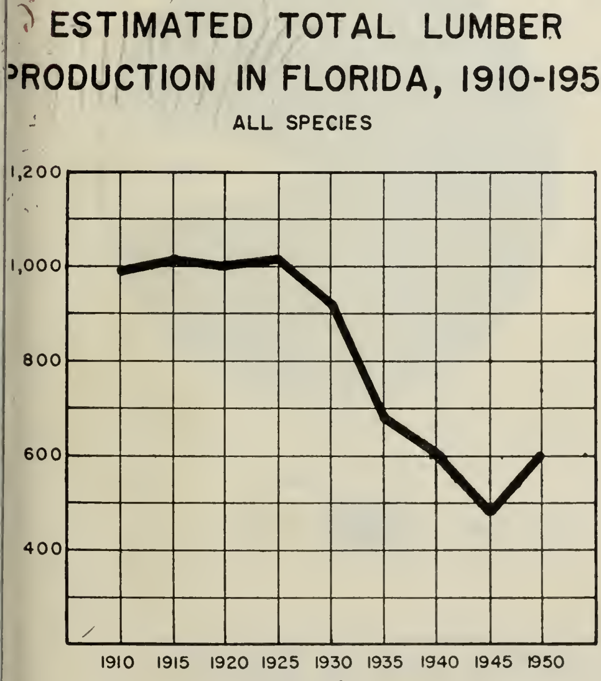


Figure 39

Depletion of the forest also affected the lives of many people. Look back at Figures 12A-13B to review the growth of population in the State. You should notice a direct relationship between the growth of the lumber industry and of population. Thousands of families from adjoining southern states came to Florida to work in the logging and turpentine camps and in lumber mills. When forest resources were depleted and logging and turpentine camps or lumber mills were moved, some people were always left stranded. Negro workers often moved on to other camps or mills, but many white families were left without means of making a decent living. Farmers who had depended on the people in the mill town to buy their vegetables and produce were left without a market. Gradually, as the State developed new industries, such as the tourist industry, some of these people found employment. Do you think that decline of forest industries helps to explain loss of population in any of the counties between 1940 and 1950 (Figure 15B)?

Summary. The history of Florida's original forests may be summarized as follows:

1. Between 1870 and 1930 most of Florida's virgin timber was cut with no provision for renewing the forests.
2. Naval stores operations weakened or killed grown trees and destroyed young trees by fires.
3. Farmers and open range cattlemen also set fires which destroyed young trees and damaged others.
4. During this time Florida's population

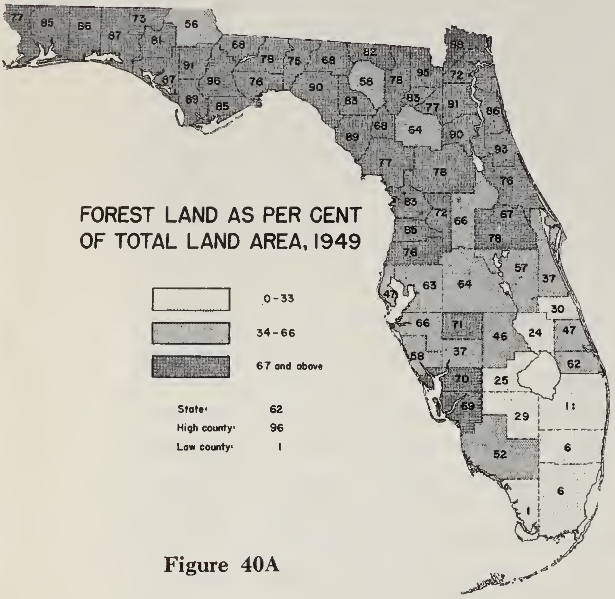


Figure 40A

grew rapidly, largely because of work provided by expanding forest industries.

5. Many Florida towns and cities began as centers for forest industries.
6. Many railroads were built to transport forest products.
7. When the virgin timber was cut, forest industries began to decline and Florida was left with the problems of (a) idle, cut-over, burned-over forest lands, many of them tax delinquent, and (b) many people left without ways of making a living.

FLORIDA'S FORESTS TODAY

Acreage and Ownership. You will recall that in 1949, 66 per cent, or 23 million acres of Florida's land, was classed as forest land.

This total acreage in forests remains about the same. Some forested lands are cleared for such crops as citrus, but some lands formerly used for farming are being planted to trees. Imagine a line across the State in Figure 40A just south of Pasco and Orange counties. Do you see that most of the counties north of the line have two-thirds or more of their area in forest land? What per cent of your county is forest land?

Refer to Figure 35B, which shows ownership of all Florida's land. Compare it with ownership of forest land as shown in Figure 40B. Note what portion of the total forest area is publicly owned. Three million acres of Florida's public land is owned by the national government.

Two-fifths of this land is in three national forests (Figure 41). Military reservations, Indian reservations, U. S. Fish

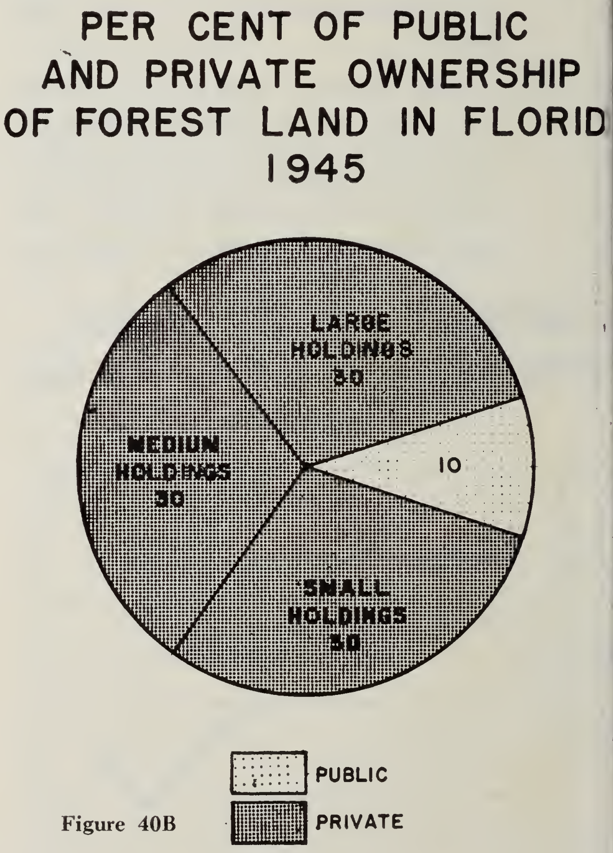


Figure 40B

*** EXPLORING FOR YOURSELF—Find out if any towns or cities in your county developed when Florida's forests were first used. What has happened to them since?

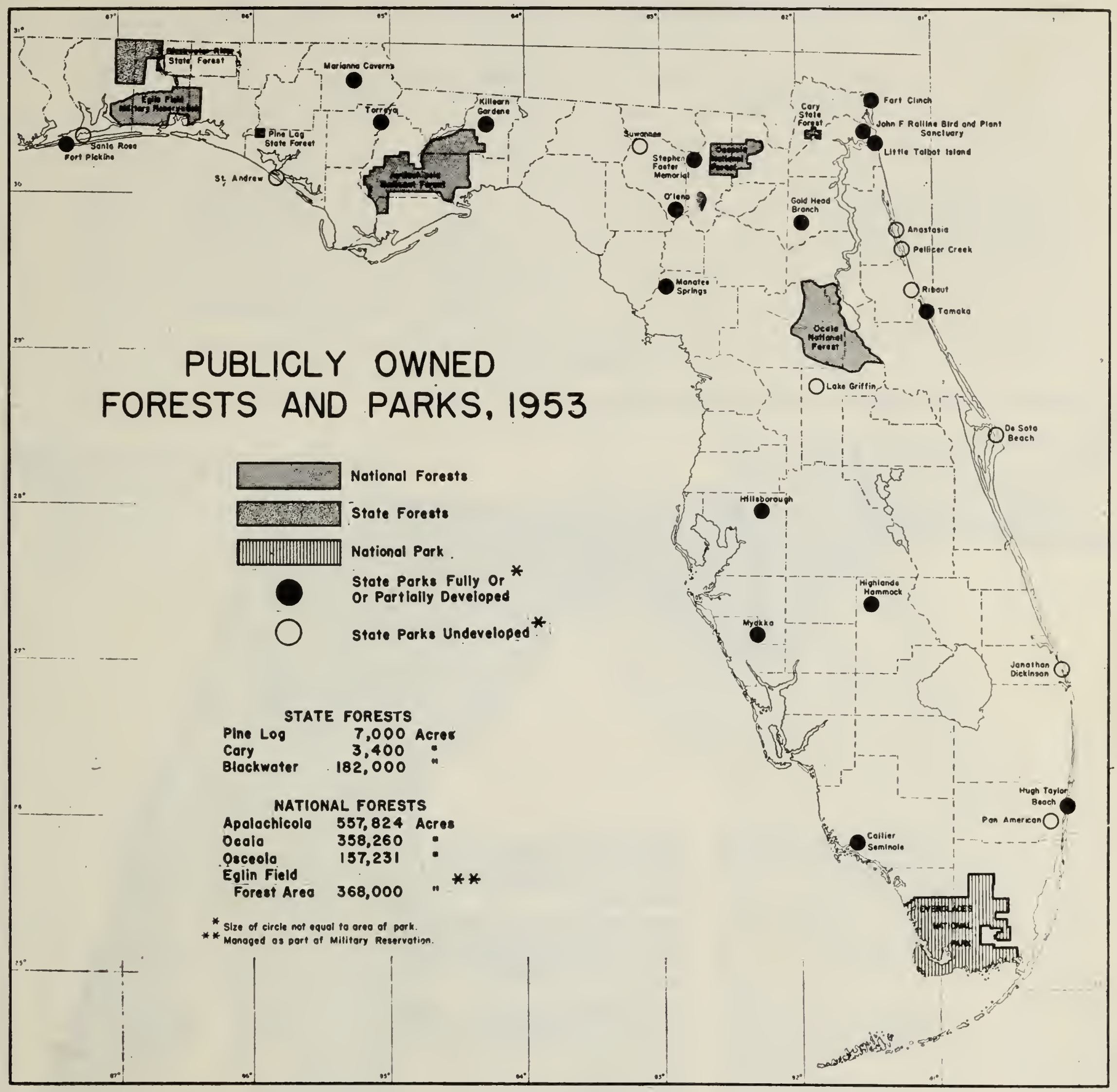


Figure 41

and Wildlife Service, and the U. S. Soil Conservation Service use most of the remainder of the national lands in Florida. The remainder of the public forest land is in state, county, and municipal ownership.

From Figure 42A find what per cent of the privately owned forest land was in large and medium sized units in 1945. What per cent of the owners are in this group? The State Forest Service tells us that among the 55,000 owners of small units of forest land, the average holding is 150 acres. More than one-fourth of the State's timberland is in farm wood lots. Farmers are learning to think of trees as

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*** EXPLORING FOR YOURSELF—Find out why national and state forests are created and publicly supported. Does your county have such forests? Are state and national parks organized for the same purposes?

PRIVATE OWNERSHIP OF FLORIDA FORESTS, 1945

Size of Holdings	*Total Number of Holdings*	*Per Cent of Total Number*	*Total Acreage*	*Per Cent of Total Acreage*
Large (50,000 acres up)	31	0.1	4,787,000	24
Medium (5,000–50,000)	611	1.1	6,706,000	34
Small (less than 5,000)	55,000	98.8	8,233,000	42
Total	55,642	100.0	19,726,000	100

Figure 42A

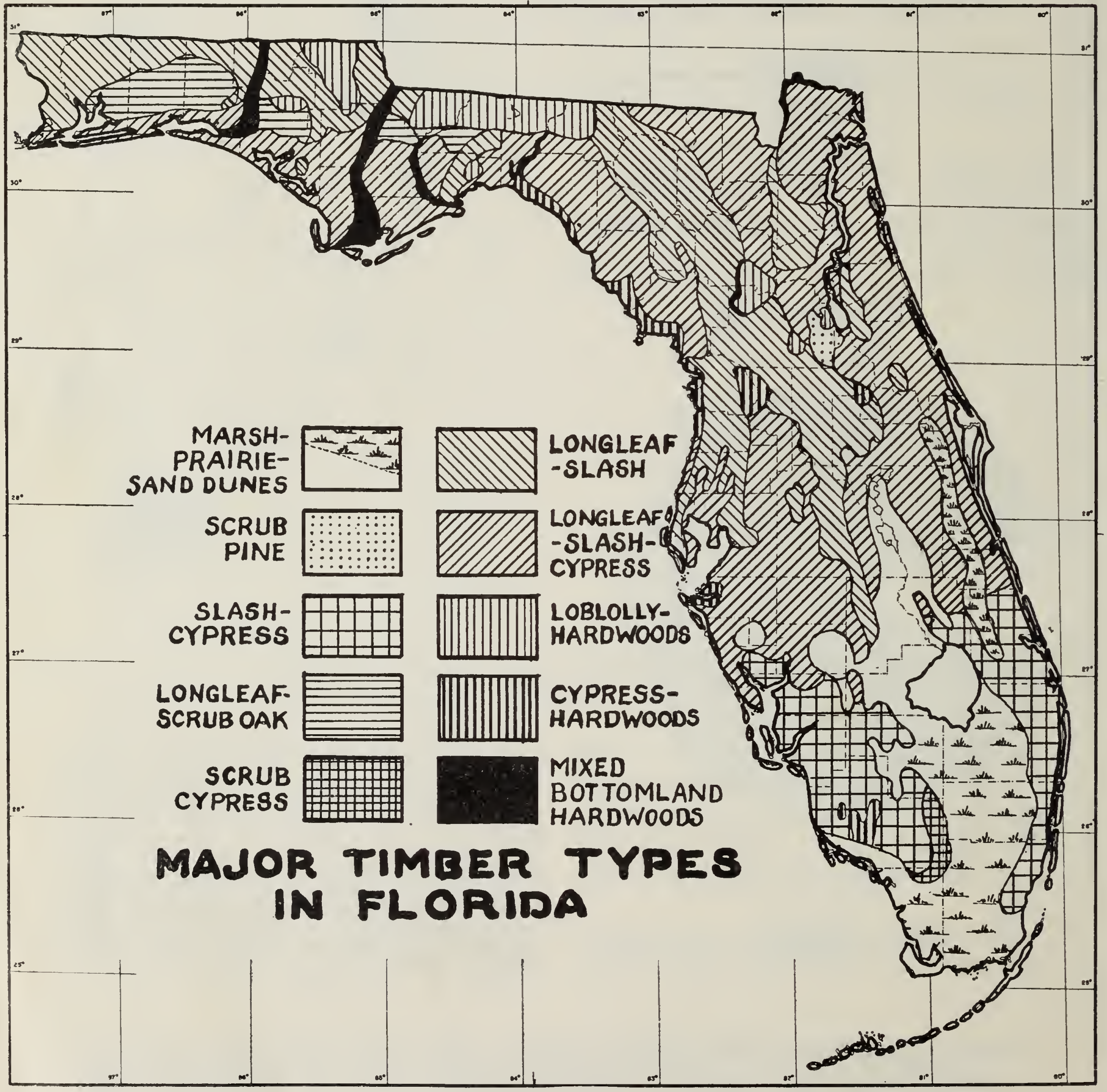

Figure 42B

an agricultural crop. A survey in 1945 revealed an average income of $669 for forest products for each farm reporting the sale of forest products.

Types and Quality of Trees. Florida's forests are made up of a variety of trees. But on nearly three-fourths of the land pine predominates, with longleaf and slash the leading types. Name and note the location of the other major types of timber (Figures 42B and 33). For example the coastal lowlands, called flatwoods, are dominated by pine.

Two recent surveys revealed a decrease in softwood forest (pine and cypress) in the State and an increase in hardwood (oak, gum, hickory, and others). This was due to the practice of cutting out the pine and cypress and leaving the scrub oak and other hardwoods to occupy the site. By the early 1950's the last of Florida's fine virgin cypress had been cut, leaving only a few small, scattered stands. As a result, production is greatly reduced and is now confined to smaller logs only.

About one half of Florida's forest land

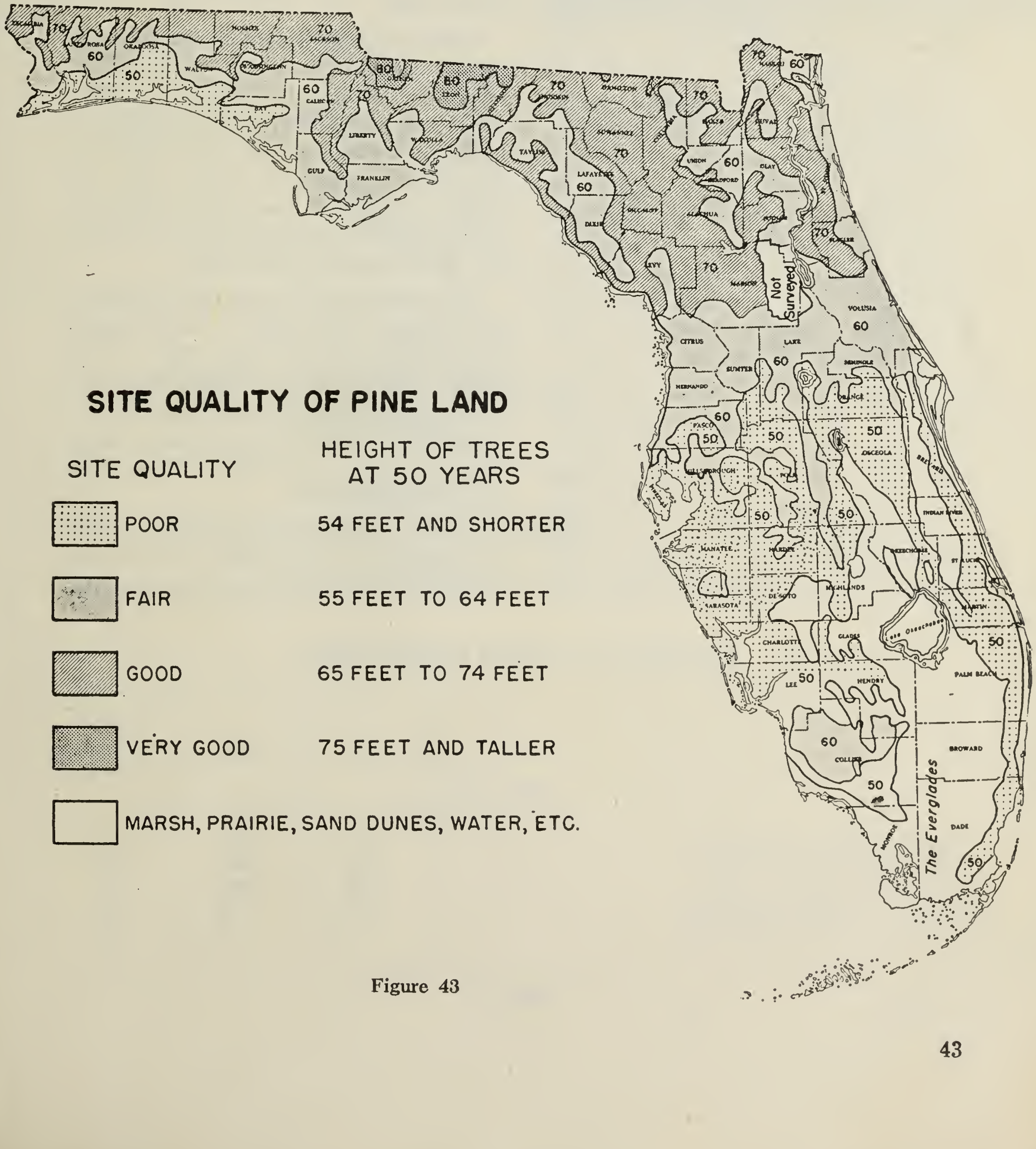

Figure 43

is rated fair to good for growing timber. Study Figure 43 to find out on what basis this rating is done. Compare this map with Figure 31. Do you see any similarity? You will see that most of the better forest lands are in the northern part of the State. On the other half of the forest land of the State the possibilities of growing timber are not so attractive. Land which requires 50 years to grow trees 54 feet or less in height is limited to producing pulpwood and some lumber for nearby local markets.

In 1949, only 42 per cent of the State's forest land was stocked with potential timber trees. The other 58 per cent was in poor condition. In recent years the rate of growth of trees of pulpwood size has exceeded the rate of cutting. A greatly expanded fire protection program and better cutting methods are responsible. For saw timber the picture is less bright. Between 1936 and 1948 there was a decrease of 17 per cent in trees large enough to cut for lumber. Sound trees of all sizes over five inches in diameter decreased 9 per cent in volume during these 12 years.

In 1949, 37 per cent of all trees in the State were of inferior stock, called culls. Scrub oak makes up the larger share of these culls. Some of these poor-quality trees, suitable primarily for fuel, are taking up space that could be occupied by more desirable types. Foresters advise that under good management these scrub oak lands could be made to produce pine again.

Production. Look back at Figure 39 to review the history of lumber production from 1910 to 1950. Study Figure 44 to see the change in forest production between 1936 and 1948. Which item showed increase and how much? This marked increase in pulpwood production made up for some of the volume loss in other products. But the total production, although it was slightly above that of the previous year, was only three-fourths of what it was in 1936.

Another change is seen in the decrease in the average size of saw timber. The ratio of large trees to small ones is normally low, about 90 to 1,000. In Florida, however, the ratio is about 4 to 1,000. In 1934-1936, 44 per cent of the pine and cypress production was small (10-12 inches in diameter at breast height); at present, 65 per cent is of that size.

The production of pulpwood is increasing throughout the South. A United States Forest Service survey shows that in 1951 twelve southern states cut more than half of the total produced in the United States. Georgia was the leading producer, Mississippi second, and Florida third with about 1,500,000 cords.

All the gum naval stores of the Nation are produced in the South. In the year 1951-52 Florida ranked second among the

CHANGES IN FOREST PRODUCTION

	1936	*1948*	*Per Cent Increase or Decrease*
Lumber (millions of board feet)	816	571	—30
Pulpwood (thousands of cords)	212	1,221	+476
Fuelwood (thousands of cords)	1,304	352	—73
Veneer Bolts (million board feet)	125	86	—31
All Other (millions of cubic feet)	32	18	—43

Figure 44

states in production of gum naval stores, with 17 per cent of the Nation's total output (Figure 45A). There has been a decline the amount produced from pine stumps, 1936, 36 million trees; in 1948-1949, 14 million; and in 1951-1952, 10 million. But the amount produced from pine stumps, light wood, and pulpwood has increased steadily. About half of the total production now comes from wood products and half from crude gum. New methods have been developed which obtain turpentine and tall oil as a by-product of the pulping process, and special distillation plants utilize pine stumps, chips and other

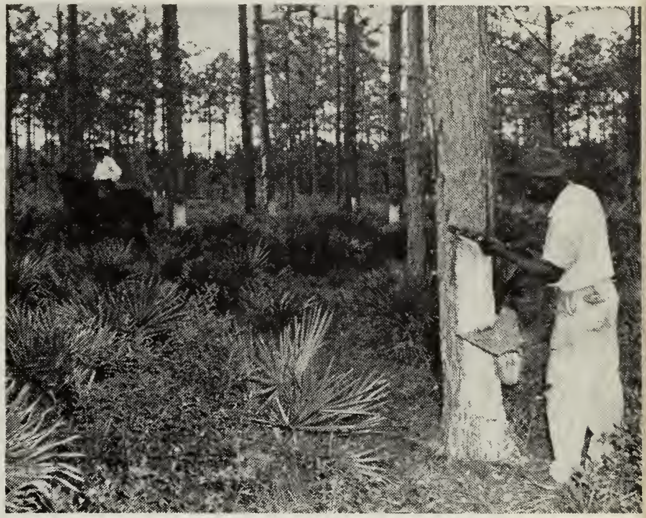

Figure 45A – A turpentine face

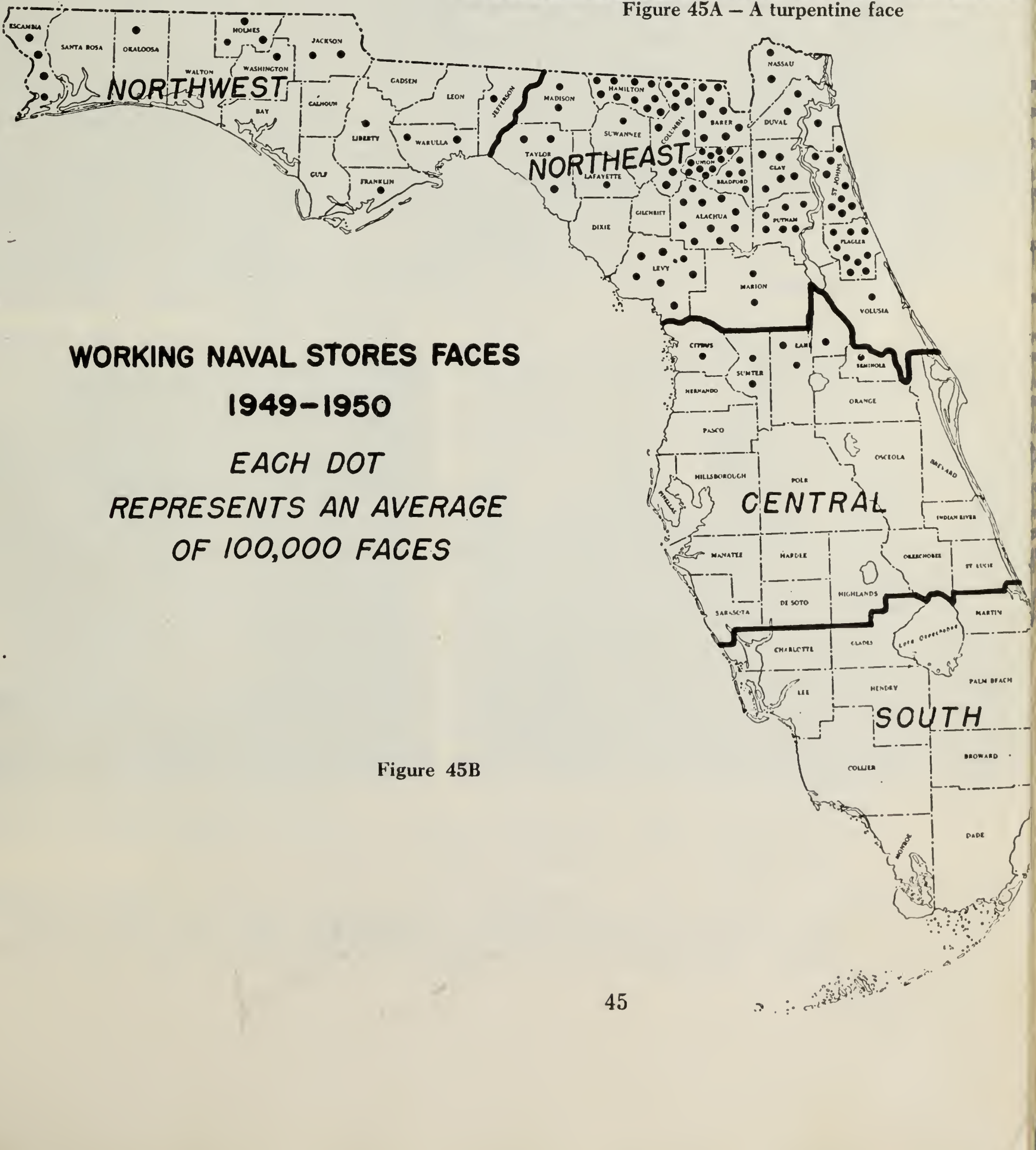

Figure 45B

resinous wood. Production of naval stores has remained fairly constant since 1900, but the portion produced from crude gum has steadily declined. However, it is recognized that turpentine from crude gum is superior for certain purposes to that produced from other methods. From Figure 45B find where in the State most of the turpentining is done. Can you tell why?

CHANGING PRACTISES

Sustained Yield. Some timber operators are learning to cut trees close to the ground, to use stumps and slash, and to cut only selected trees (Figure 47A). They employ the acid method of turpentining Figure 47B). They leave seed trees and protect young trees from fire. These practices allow the trees to grow and provide a continuing supply of forest products. In spite of this knowledge, only one-third of the timber cutting being done in Florida woodlands is rated by foresters as good or even fair. Moreover, the poorest forest management is practiced by the small owners as a group. They provide half of the timber cut for all purposes. The Florida Forest Service is assisting both small and large owners to improve their forest management practices, in order to insure a sustained yield.

Restocking. A major land-use problem in Florida is the idle forest land. In 1949, 58 per cent (12.4 million acres) of the forest land was either unstocked or poorly stocked with sound trees of commercially valuable species. Much of this land left idle or producing little income can be planted profitably with trees. Some of it is recently cut-over land and idle agricultural land. If protected from repeated fires, some of it can be expected to restock naturally in a reasonable time. However 3.5 million acres do not have enough seed trees to insure natural restocking. Forest land owners, banks, railroads, and public agencies have cooperated in producing and planting about 200 million pine seedlings during the period 1928 to 1935 (Figure 47C).

Serious obstacles to natural restocking and replanting are lack of sufficient seed trees and presence of low grade hardwoods. Normally, when enough seed trees are present, fire prevention and simple management practices can accomplish much toward restocking. The cost of eliminating undesirable hardwoods discourages replanting this kind of land. However, the practice of killing these hardwoods with tree poisons is gaining favor, and the wide use of mechanical tree planters (Figure 48A) has reduced the cost of planting. Nurseries operated by the Florida Forest Service at Olustee and Munson now have a joint capacity of 50 million seedlings. Forest owners may purchase these seedlings at cost. Also, several private nurseries are growing stock for reforestation. 150,000 acres of the 3½ million acres still needing replanting were planted in the year 1952-53. At this rate can you estimate how long it will take to replant Florida's potential forest land? If adequately stocked with timber, Florida's forest land could grow 2½ times as much timber as it is now growing.

Fire Protection. You will recall that fire was a big factor in the decline of Florida's forests. Fire protection of pri-

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*** EXPLORING FOR YOURSELF—Make a scrapbook or display chart of pictures and clippings on the expanding pulpwood industry in the South.

*** EXPLORING FOR YOURSELF—Learn all you can about Charles H. Herty's work in developing better methods in turpentining. Also read about Homer T. Yaran's development of new methods of producing naval stores from stumps.

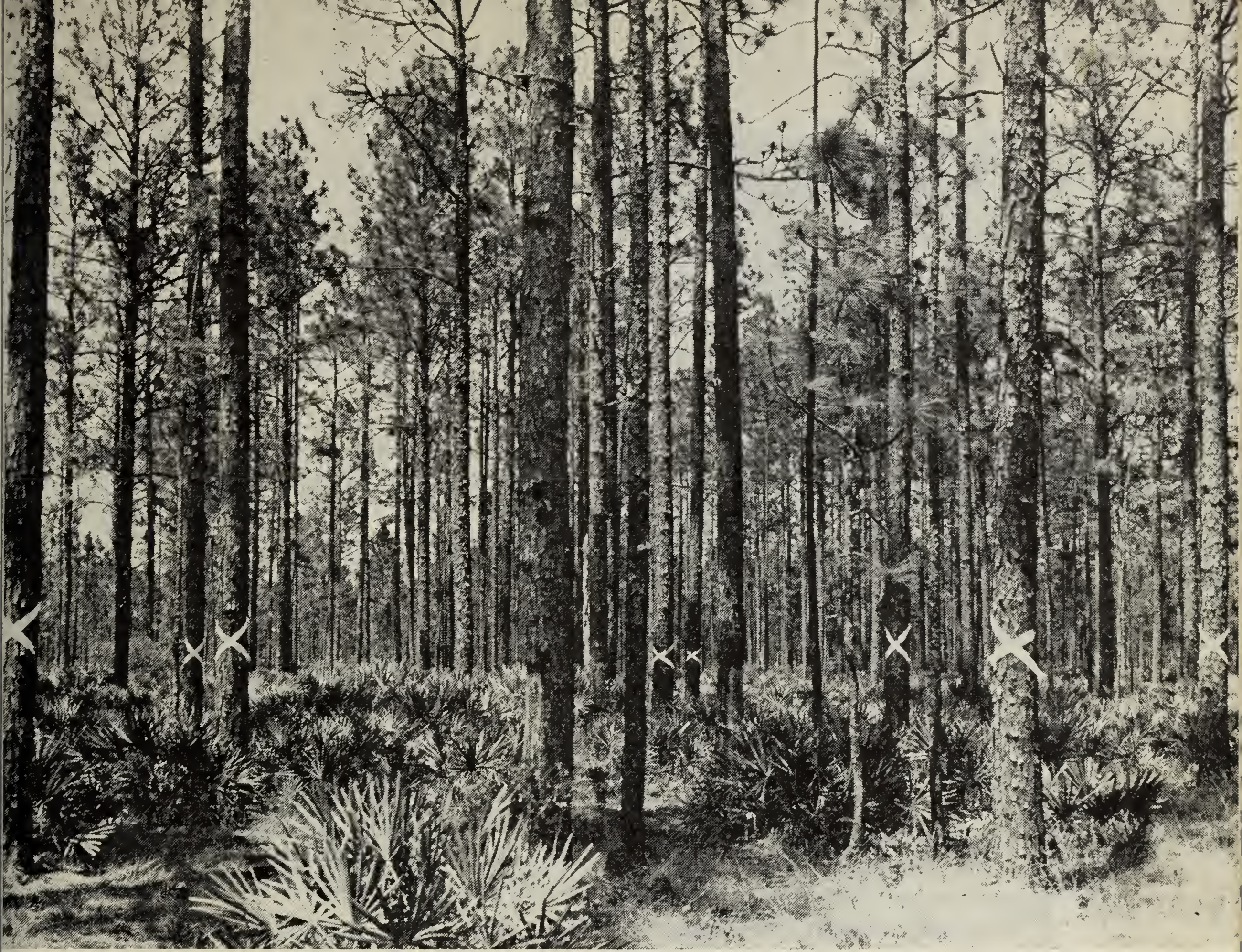

Figure 47A — Trees marked for selective cutting

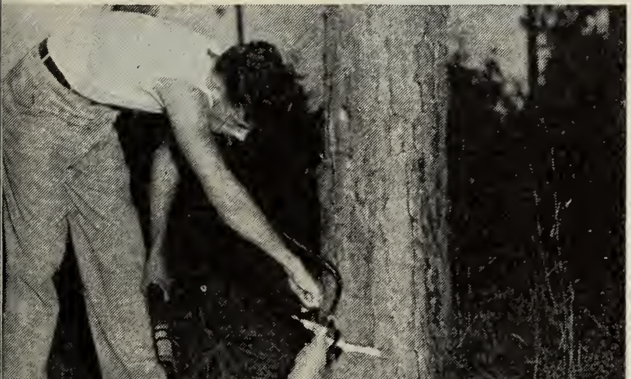

Figure 47B — Acid method of turpentining

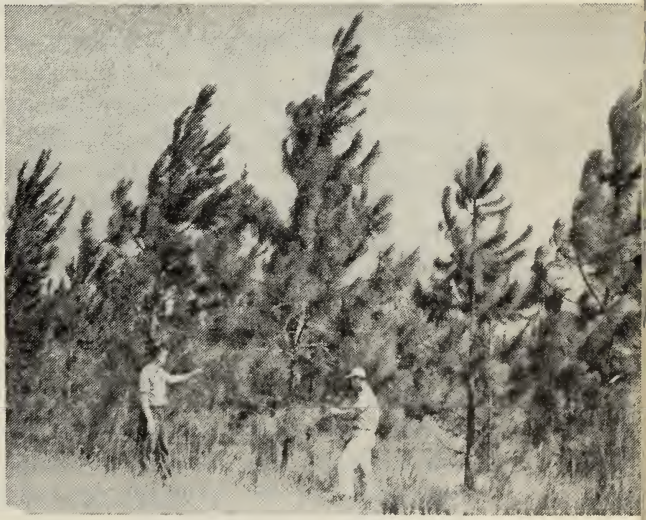

Figure 47C — Planted pines

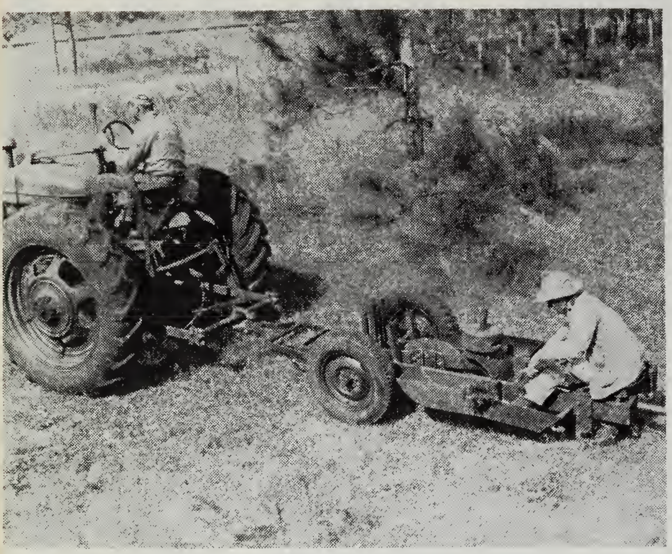

Figure 48A — Machine planting of pines

vately owned forest land had its beginning with the passing of a law by the 1927 State Legislature creating a Board of Forestry. This law authorized the Board to enter into cooperative agreements with land owners, by which they paid half and the state and federal governments the other half of the cost of prevention and control of woods fires. A later law (1935) enables the people of a county to vote for or against county-wide fire protection. Study Figure 48B to see what counties had organized protection by 1950. The area under protection amounted to about two-thirds of the total forest area of the State. In what sections of the State are most of the counties with 2/3 or more of their forest land protected? Can you explain this?

Note in Figure 49A the per cent of protected and unprotected area burned over in 1951-1952. Study the causes of forest fires in Figure 49B. Who do you think is responsible for the carelessly set and intentionally set fires? Note the amount of money spent in Florida in 1951 on preventing and combatting forest fires. It is estimated that in 1950 the loss in timber in the forest was 9 million dollars, and the total loss to all industries using wood was 62 million dollars. Estimate the probable saving on the protected 2/3 of the forest land, only 2 per cent of which burned. In addition to $1,640,000 shown in Figure 49A, forest land owners spend many thousands of dollars annually on protection projects not supervised by federal or state agents. Owners and foresters have been instrumental in organizing the Keep Florida Green campaign.

Sometimes incendiary fires are set by people who resent being excluded from certain areas where they would like to hunt and fish. These "spite fires" account for many thousands of acres burned each year, and landowners have been faced with the problem of keeping such fires to a minimum. Below are two signs which are found in various parts of the forest areas of the State. The first represents the policy generally favored by landowners

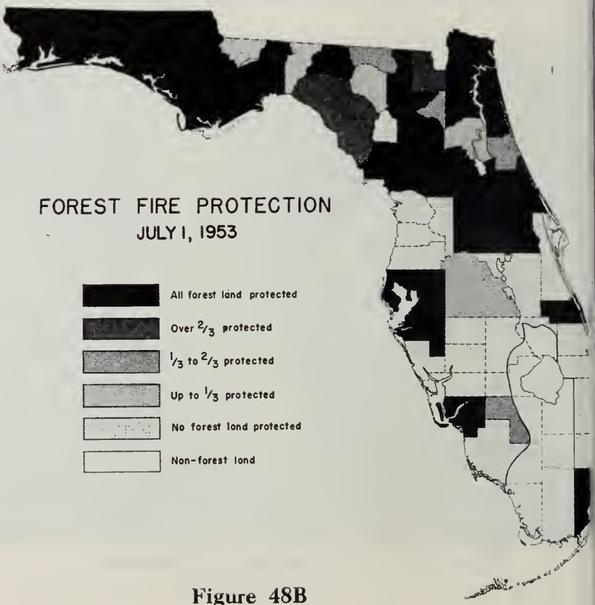

Figure 48B

*** EXPLORING FOR YOURSELF—Find out how the federal, state, and county governments cooperate in forestry work in Florida.

FOREST FIRES IN FLORIDA, 1952-1953

	Acres	*Per Cent Burned*	*Cost of Control*
On Protected Land	12,800,000	2	$1,640,000
On Unprotected Land	7,100,000	58	

Figure 49A

in the past, and the second shows the attitude of a few owners with respect to their forest land. Which do you think will get the better result and help prevent more "spite fires"?

POSTED
$100 REWARD
For Arrest and
Conviction for
HUNTING, FISHING
OR TRESPASSING

In spite of progress made, wild-fires (not controlled) are still Florida's number one forest problem (Figure 50). In an average year forest fires burn over 3½ million acres of timberland, causing a total loss of more than 60 million dollars. Some of the burning on both protected and unprotected land is probably controlled burning, advised by foresters. This prescribed burning can be a valuable tool in the management of some pine forests. But no doubt most of the burning in the past was uncontrolled, and connected with cattle raising.

HUNTERS!

You are welcome to hunt on this land and we wish you good luck. Do us a favor, won't you?

PLEASE BE CAREFUL
WITH FIRE! !

We will Control Burn this area later, but now we are trying to keep it green and give these young pines a chance to live. Thank you.

During recent years there have been marked changes in the cattle industry in Florida, characterized by better breeds

CAUSES OF FOREST FIRES IN FLORIDA, 1951-1952

Causes	*Per Cent*	*Kinds of Carelessness Responsible for Fire*	*Per Cent*
Natural Causes (Lightning)	5	Brush Burning	12
Intentionally Set	63	Smokers	6
Carelessness	32	Railroads	1
		Lumber Operations	1
		Campers	1
		Miscellaneous	3
		Unknown	8
		Total Carelessness	32

Figure 49B

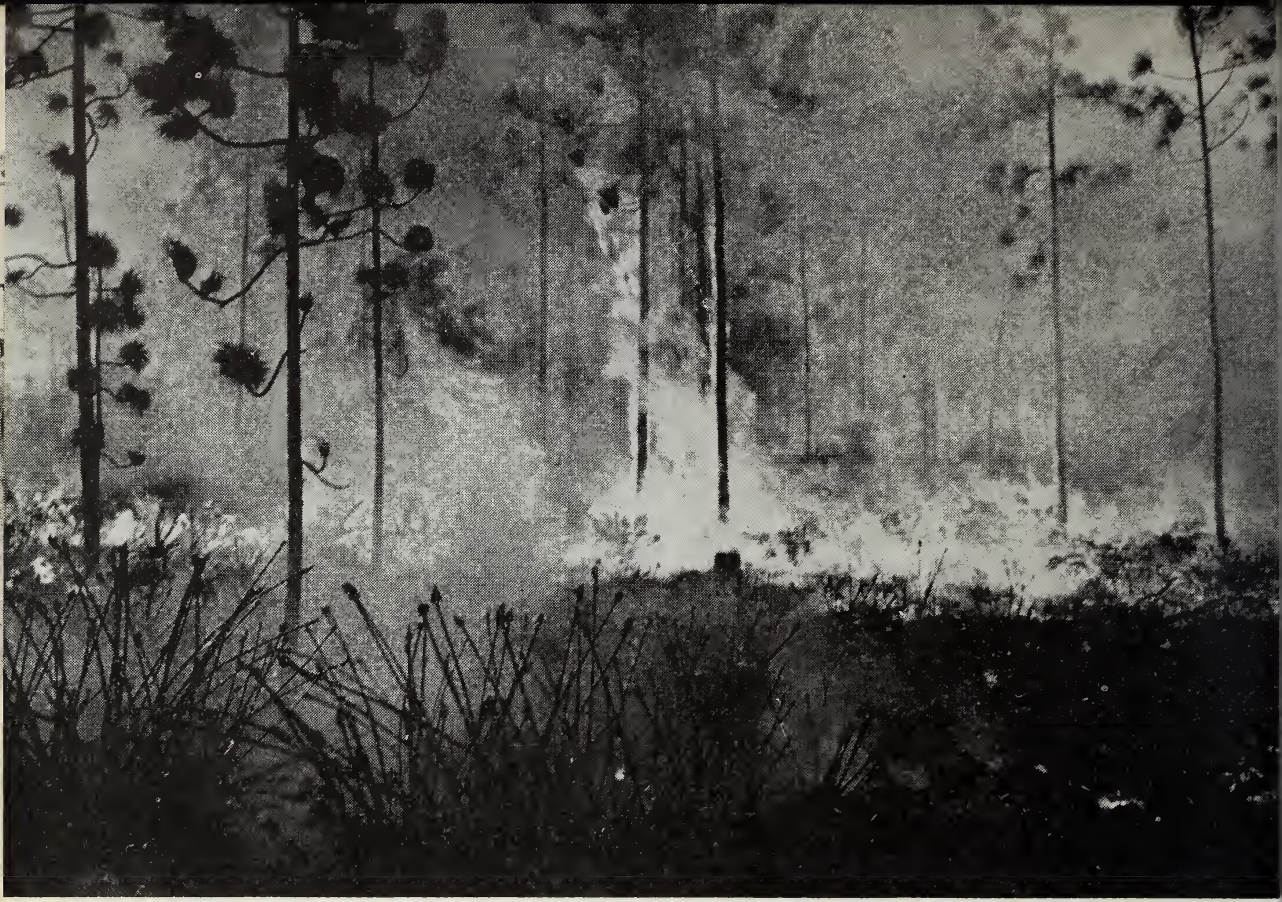

Figure 50 — Forest fire

and improved fenced pastures. In Chapter 8 you will learn more about this development. There has been some disagreement as to whether forest land can be used to produce both timber and beef at the same time. The most productive use of the land probably will be either improved pastures or well-managed forest areas. However, some grazing—one head to 10 to 15 acres—can be carried on in connection with good forest management. In time tree competition will reduce grazing even further (Figure 51).

Summary. Summarizing what we have learned of Florida's forests today, we can say that:

1. About two-thirds, or 23 million acres, of Florida's area is forest lands; northern Florida is the most important timber producing section of the State, with more than 80 per cent of the area in forest use.
2. Pine species predominate throughout the State, but pine types are decreasing and hardwoods are increasing.
3. About half of Florida's forest land is rated as good or fair; the other half is rated as poor, that is, not adapted to growing saw timber rapidly. However, trees can be grown for pulpwood and local lumber markets. Forest research now going on is working out techniques for more profitable use of poor lands.

*** EXPLORING FOR YOURSELF—Find out more about the cost of building and manning fire towers, providing radio systems, telephone lines, roads, fire fighting equipment, and training mill and woods crews as fire fighters. Does your community have many forest fires? If so, how are they caused? Is public opinion—the thinking of people in your county—in favor of preventing forest fires?

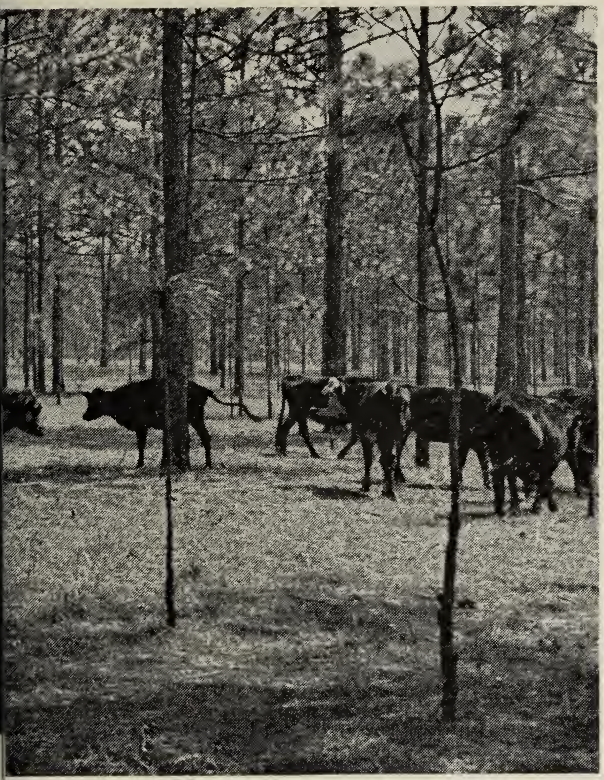

Figure 51 — Cattle grazing in forest

4. More than half of the forest land is poorly stocked.
5. The volume of wood from Florida forests has been decreasing since the 1930's, but in the last few years has started to show gains.
6. About 10 per cent of Florida's forest land is owned by federal, state and local governments; the remaining 90 per cent is owned privately, the acreage being distributed about equally between small, medium, and large holdings.
7. Over two-thirds of the State's forest lands are under organized protection.
8. Almost a third of the forest land of the State needs replanting.
9. Forest management in Florida, especially of small holdings, needs to be improved.

SOME SUGGESTIONS FOR THE FUTURE

To meet its own needs for wood products and also to contribute its share in meeting the needs of the Nation and of other nations, it is estimated that Florida should produce twice as much timber as it does now. This means not only that we should use our present timber supply wisely but that we should renew and increase our stock in every way possible to provide for a sustained yield. It is easily seen that good forestry practices bring direct profit to owners of forest land and forest industries. It should be realized also that everyone profits indirectly in some way by a plentiful supply and the wise use of forest resources. Therefore, it

*** EXPLORING FOR YOURSELF

1. Visit a fire tower and talk to a ranger about how fires are spotted and put out. Learn about the equipment used and about fire-breaks and other ways of controlling woods fires.
2. Visit a tree farm. Inquire about the methods used and the progress made toward full production and continuous income from the woods.
3. Visit a lumber or pulpwood mill. Talk to the manager about problems of supply. Find out if selective cutting, reforestation, and fire control are practiced.
4. Through the principal of your school, get permission from the county school authorities to plant some pines on your school grounds. Guard them from harm and watch them grow.
5. Make a collection of specimens from the different kinds of trees that grow in your community, taking note of the kind of soil each seems to prefer.
6. Make a class scrapbook or display of pictures and magazines and newspaper articles on forestry in Florida and the Southeast.

would seem not only a matter of good citizenship, but also of enlightened self-interest, for all of us to do our share toward the achievement of this goal.

Some suggested steps toward this goal are:

1. Reduction of timber loss by fire.
2. Combination of gum production with timber growing.
3. Improvement of forest cutting practices.
4. Expansion of the planting program.
5. Development of methods for restocking *poor* land.
6. Better utilization of available timber.
7. Guidance for the development of additional forest industries.

Chapter 6

Using Florida's Lands for Specialized Farming

Civilization is often said to be based upon the wheel. Certainly Florida's two largest industries may be symbolized by turning wheels. Wheels moving south represent tourists coming to Florida for the winter season, bringing to the State its greatest income, while wheels moving in the opposite direction represent the next largest source of her income. Long trains of refrigerated cars moving swiftly along railroads to northern markets, and large numbers of rumbling trucks rolling along our highways, filled with oranges, grapefruit, tomatoes, celery, and other vegetables, represent an important growing business in Florida. Trainloads of sugar, shipments of tung oil, pecans, tropical fruits, and tobacco, all help to swell Florida's income.

You will recall from Chapter 2 that Florida has a small rural farm population. Consult Figure 54A to see how counties and parts of the State compare in per cent of population that is rural farm. Note especially the concentration in north Florida. What question is raised by comparing Figures 54B, 54C, and 54D with 54A? Figure 54E provides a partial answer to this question. Look for a more complete answer as you study this chapter and the next two. Figure 54F shows another difference between parts of the State and should raise another question. This question, too, will be answered as you continue your study.

On the 48 per cent of Florida's land used for farming, more people are employed and more money value produced than in any other basic industry (Figures 23A and 23C). You can see from Figure 55A that the average value of crop yields per acre for Florida is very high compared

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*** EXPLORING FOR YOURSELF—Where does your county fit into the picture shown by the six maps (Figures 54A to 54F? Can you give reasons for the facts shown for your county on these maps?

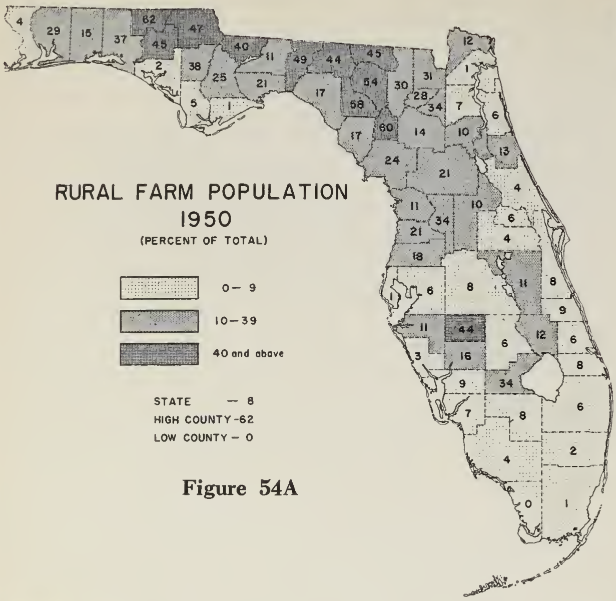


Figure 54A

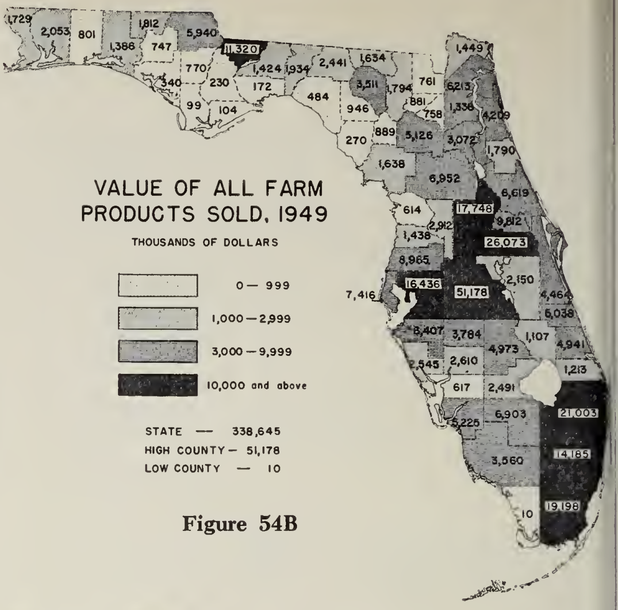


Figure 54B

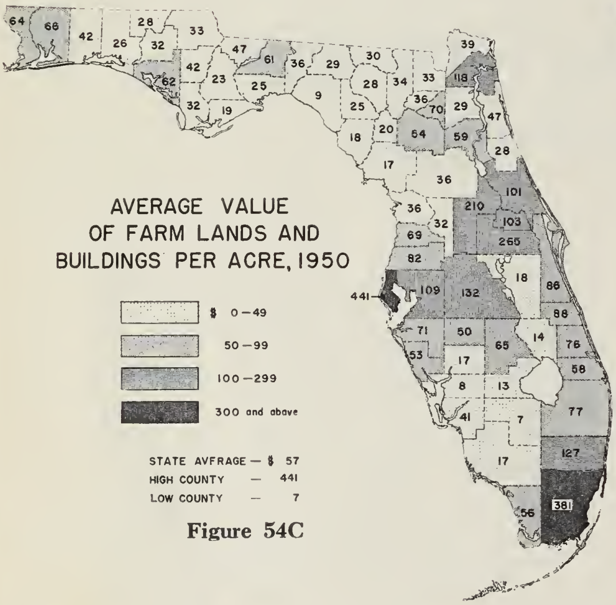


Figure 54C

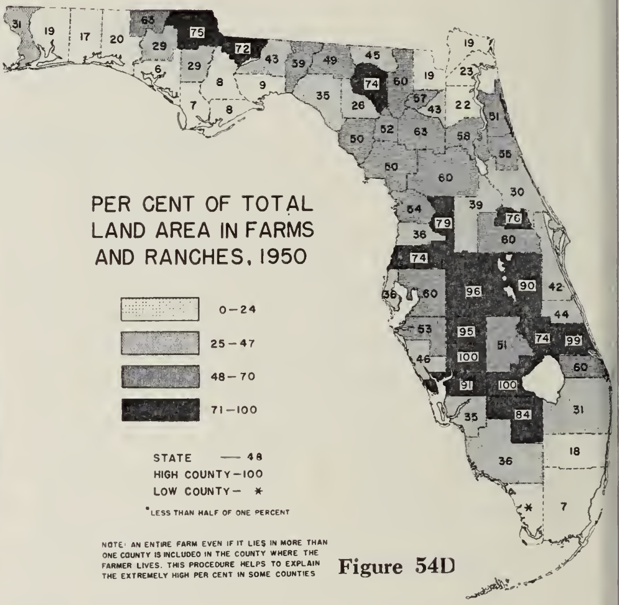

PER CENT OF TOTAL LAND AREA IN FARMS AND RANCHES, 1950
0 – 24
25 – 47
48 – 70
71 – 100
STATE — 48
HIGH COUNTY – 100
LOW COUNTY – *
*LESS THAN HALF OF ONE PERCENT
NOTE: AN ENTIRE FARM EVEN IF IT LIES IN MORE THAN ONE COUNTY IS INCLUDED IN THE COUNTY WHERE THE FARMER LIVES. THIS PROCEDURE HELPS TO EXPLAIN THE EXTREMELY HIGH PER CENT IN SOME COUNTIES

Figure 54D

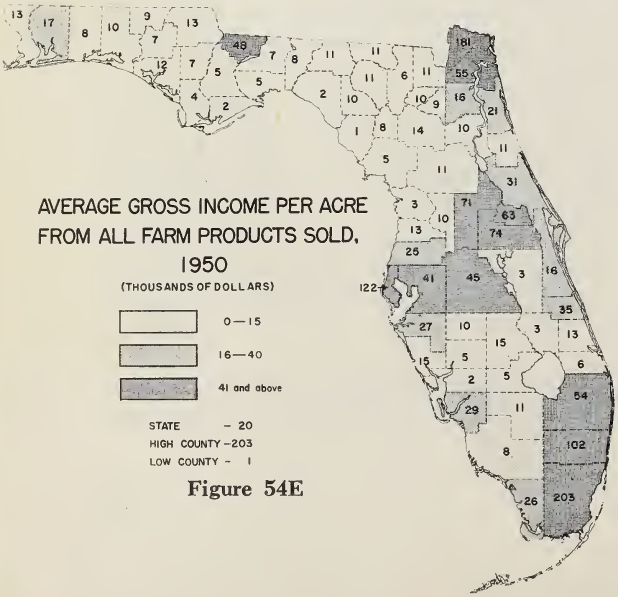


Figure 54E

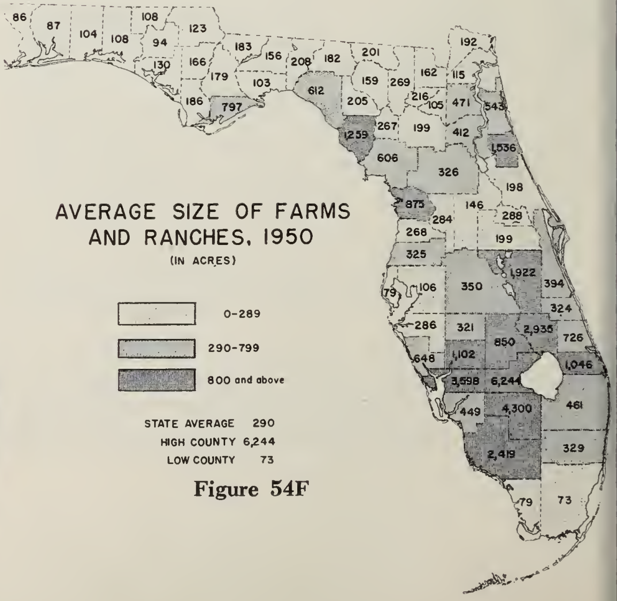


Figure 54F

CROPS HARVESTED, 1949

State	*Value*	*Acres*	*Value per Acre*
United States	$16,297,089,000	344,399,000	$46.36
Florida	308,558,257	1,728,232	178.53
Alabama	274,968,217	5,729,421	47.99
Georgia	328,512,068	7,098,147	46.28
Mississippi	361,685,760	6,136,206	58.94
North Carolina	602,317,563	5,782,407	104.16
South Carolina	247,193,612	3,959,822	62.42
Tennessee	328,932,014	5,575,106	59.00

Figure 55A

with the other southeastern states, and with the United States as a whole. Despite this fact, relatively little of Florida's land is in crops (Figure 35A). Figures 31 and 55B will show you some of the reasons why so little of Florida's land is in crop production:

1. Florida has little excellent or good land.
2. Florida has more poor land than many states, 80 per cent of it being sand or a sandy loam of relatively low fertility.
3. Florida has more land unfit for cultivation without irrigation, drainage, or fertilization than any other eastern state. (Western states with their large areas of mountainous land have the greatest acreage of land unfit for crops).

Man may use the available land in many different ways. He can use it to grow forests, or to graze animals or to produce a wide variety of crops. Some land is better suited for one purpose than for others. You know from Figure 31 that Florida has many kinds of soil. You know also that the climate is much warmer in southern Florida than it is in northern Florida. Doesn't this suggest to you that farming methods may be different, and different crops may be grown in various parts of the State, or even in different sections of your own county?

The use to which land is put may change as new demands arise for special crops or as farmers learn to grow other crops more profitably. As you study Flor-

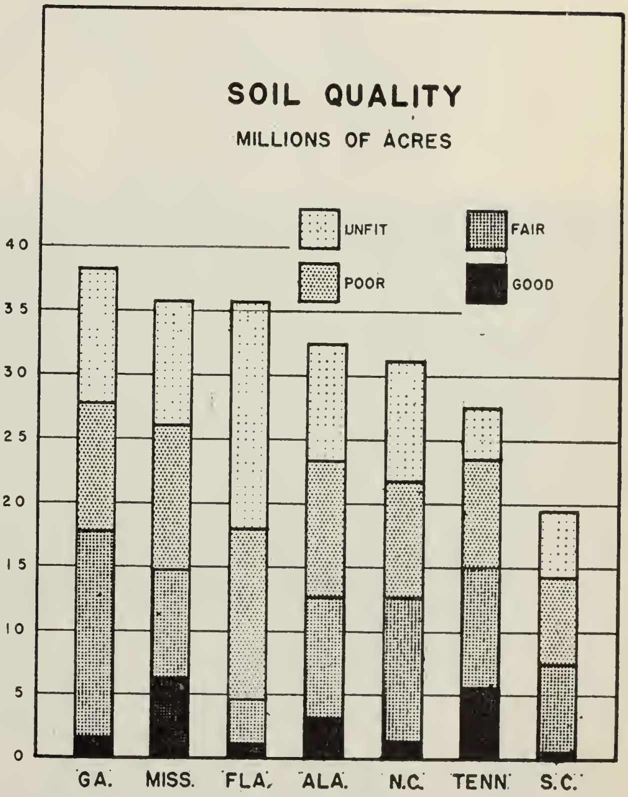


Figure 55B

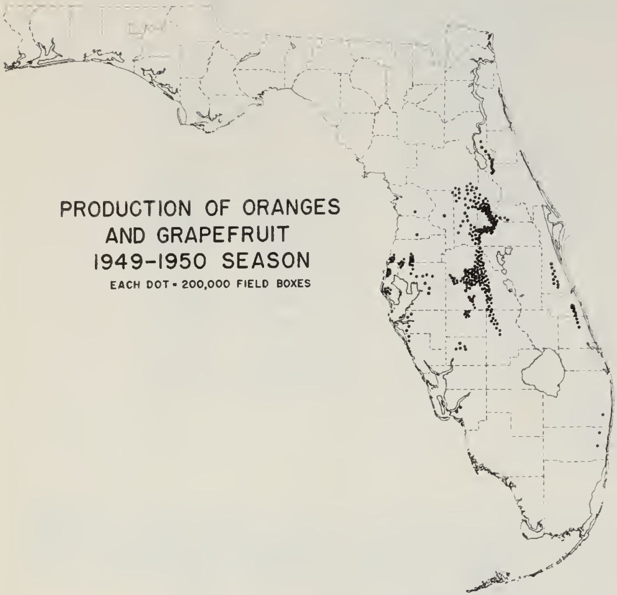


Figure 56A

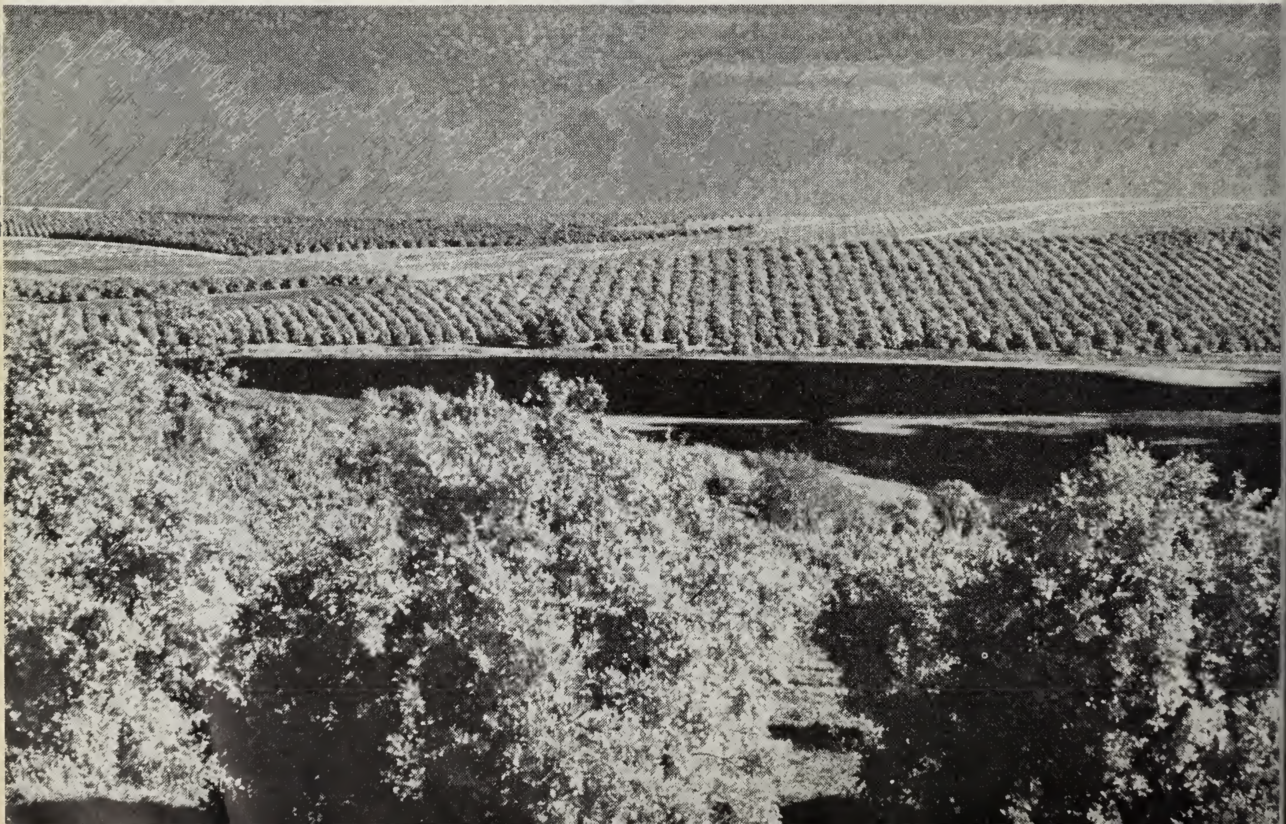
ida's agriculture you should try to find how such factors as temperature, rainfall, land use, fertility, and marketing practices contribute to the ability of so few acres to support so many people and yield so much income.

CITRUS FRUIT

Florida's most important agricultural product is citrus fruit. Citrus crops include grapefruit, oranges, tangerines, limes, lemons, and such less well-known fruits as the satsuma, the mandarin and king orange, and the tangelo, kumquat, calamondin, and limequat.

Citrus fruits became important back in the times of Columbus, when they were taken on long sea voyages to prevent the terrible disease called scurvy, which attacks people who do not get enough vitamin C from fresh fruit and vegetables. The mariners knew nothing of vitamins, but they knew that some citrus crops, especially limes, would keep for a much longer period of time than other fruits, and so they became popular and valuable. Limes were introduced into the Florida Keys to take advantage of the mariners' demands for limes. Limes thus became Florida's first commercial citrus crop. Later, with improved transportation, oranges and other citrus crops that do not require such a warm climate, became important in other sections of Florida.

Figure 56B — Citrus grove in ridge and lake section



Growing Oranges and Grapefruit. Figure 56A shows that most of Florida's oranges and grapefruit are now grown in the central ridge and lake region of Florida, extending from Marion County in the north to Highlands County in the south. The map in Figure 33 and the picture, Figure 56B, show you why this is called the ridge section. The leading eight citrus producing counties in 1950 were as follows:

County	*Thousands of Boxes*
Polk	21,531
Orange	10,963
Lake	8,927
Pasco	3,805
Pinellas	2,622
Hillsborough	2,271
Highlands	2,234
Brevard	2,170

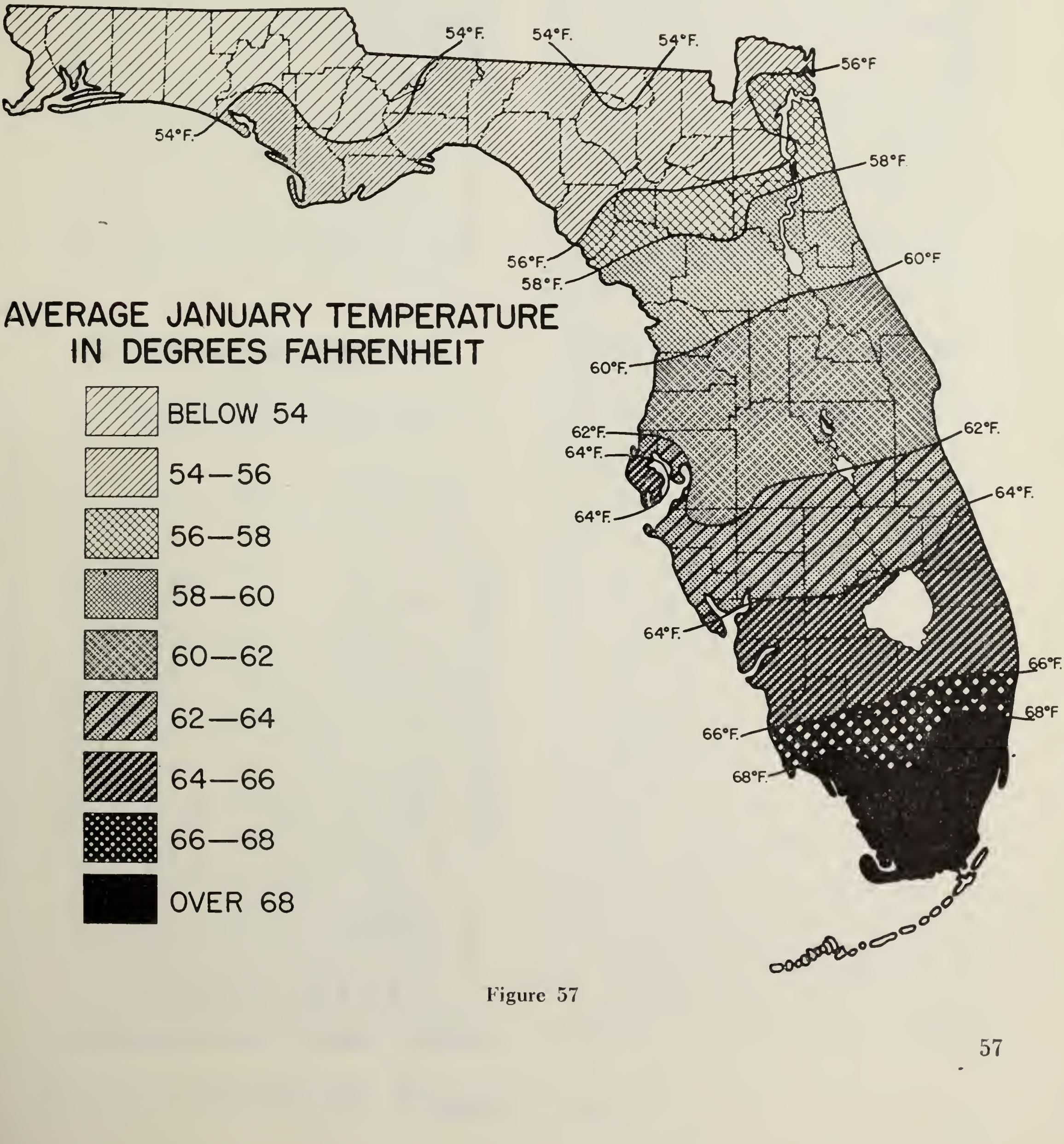
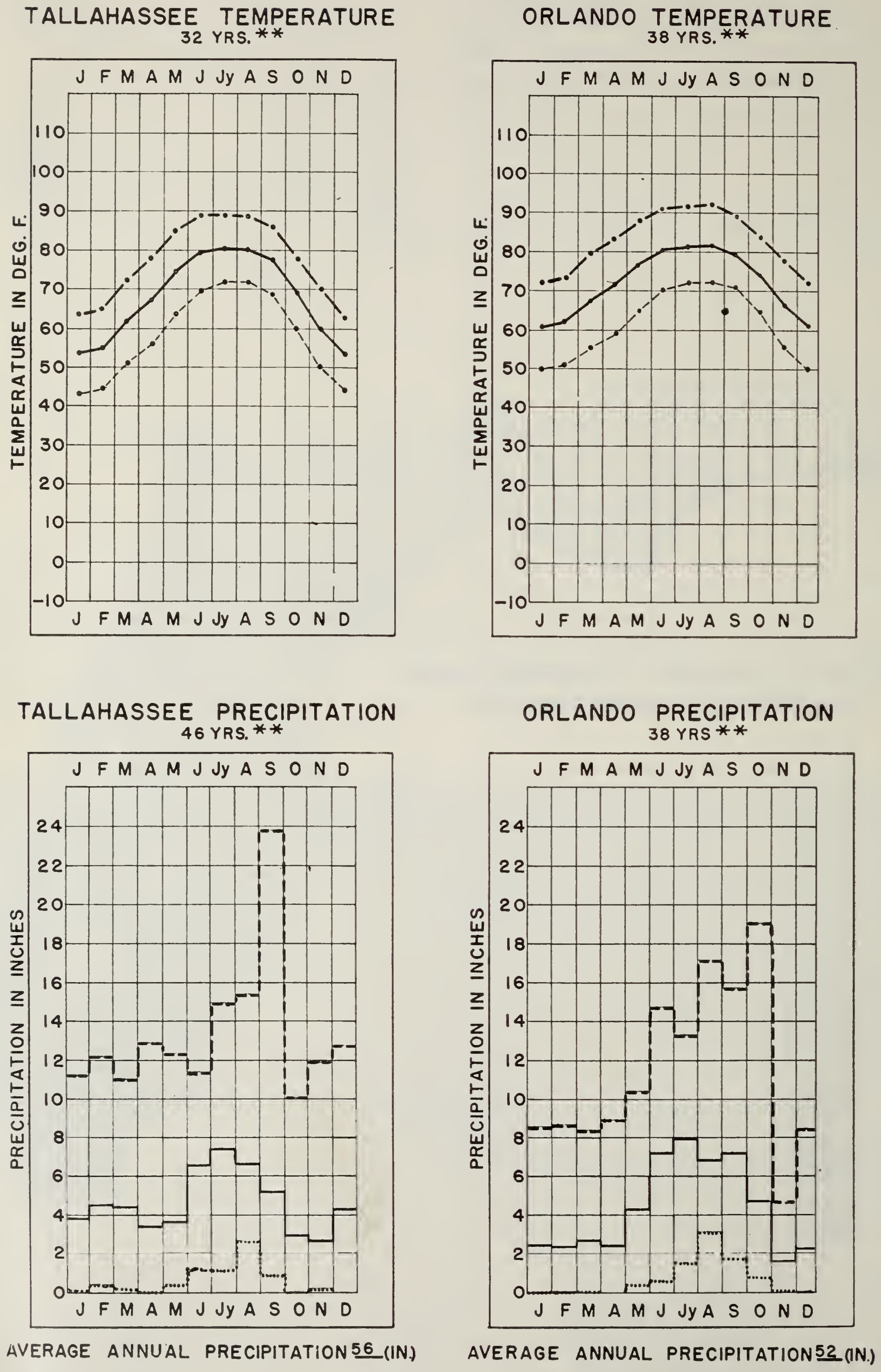


Figure 57

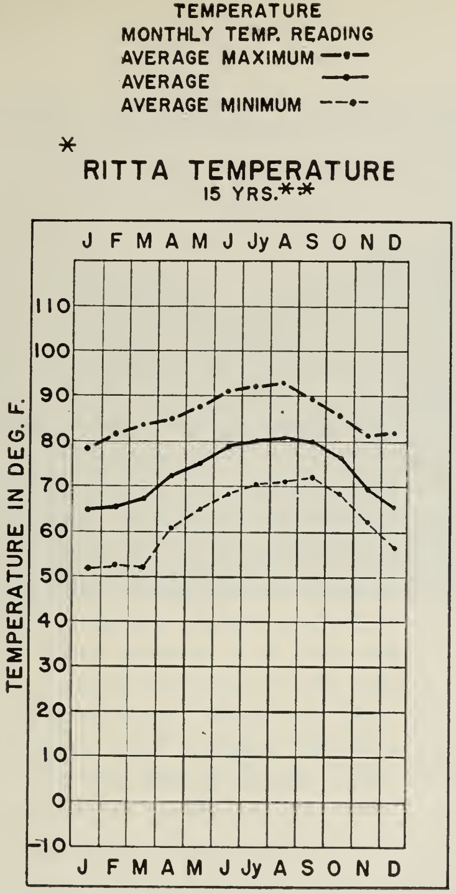
CLIMATIC DATA
FOR
THREE FLORIDA STATIONS

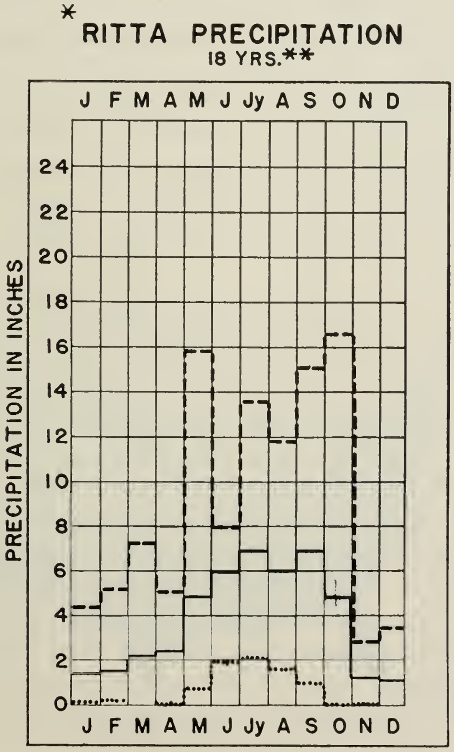
PRECIPITATION
ACTUAL MAXIMUM ---
AVERAGE ——
ACTUAL MINIMUM ·········



** LENGTH OF RECORD

Figure 58





AVERAGE ANNUAL PRECIPITATION 45 (IN.)

* RITTA IS LOCATED ON SOUTHERN SHORE OF LAKE OKEECHOBEE SOUTHEAST OF CLEWISTON

Citrus is a semi-tropical crop that cannot stand cold weather. Much sunshine throughout the year and warm days, even in winter when nights may be cool, are major advantages. Find the 60 degree temperature line on the map in Figure 57. In order to understand this map, it is necessary to know what *average January temperature* means. The average temperature for a single day is secured by averaging the highest and lowest temperature recorded for that day. Averaging the average daily temperatures for all the days in a given month gives the average monthly temperature for one year. To secure the kind of average shown in Figure 57, January averages for all the years recorded are also averaged. In places where January temperatures, usually the coldest in the year, average 60 degrees or higher, growing weather is continuous throughout the year, except for occasional brief cold spells during which freezing might occur. Note in Figure 56A where citrus is grown with reference to the 60 degree average temperature line in Figure 57.

Winters are not, however, the same every year. In some years there is no freezing weather at all, and in others Jack Frost may creep far southward several times. Light frost may injure or destroy the fruit; occasionally freezing is so severe as to kill some of the trees. An entire community may be robbed of an anticipated year's income in a single night. Prior to 1894, during a period of mild winters, most of the citrus in Florida was grown well north of where it is now. But in 1894-1895 and again in 1899, killing freezes destroyed many of the trees. Figure 58 will show you how much our average winter temperatures vary from year to year.

As people learned from experience about the variations in Florida's winters, citrus growing, except for satsumas, was largely abandoned in north Florida and moved southward. Thus citrus production on a commercial scale got started in central and south Florida about 1900 and

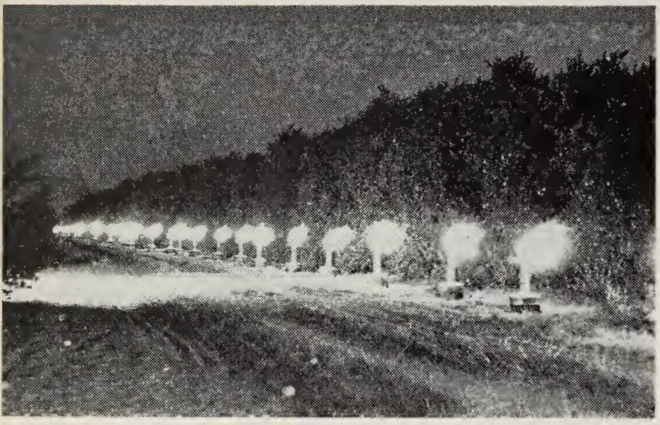


Figure 60A — Oil heaters in citrus grove

grew rapidly with improvements in transportation and increased demand in northern markets. When the earth cools off at night, cold air, being heavier, settles in valleys and other low spots, leaving the higher ridges warmer and less likely to freeze. Oceans and inland bodies of water also help to keep the temperatures higher. With experience, farmers have reduced losses from freezing weather by planting citrus fruit on the more frost-free spots in the lake and ridge section of central Florida. Find Orlando, Bartow and Brooksville on a road map showing cities and lakes. How does the location of these cities help to explain the differences among them in average number of days the temperature falls below 32 degrees F.? The citrus grower pays close attention to newspaper and radio weather forecasts, and the weather bureau now does a highly accurate job of telling when freezing may be expected to occur and how low temperatures are likely to be.

Growers use many methods of protecting their crops and are always looking for better ones. Young trees are often banked with earth to protect them. Wood is stacked in the grove and burned when temperatures become too low (Figure 60A). Many growers have built permanent smudge pots, burning oil or wood, between the rows of their trees to blanket the grove with warm air during freezes. Figure 60B will show you for selected stations the average number of days the temperature falls to 32° F. or lower.

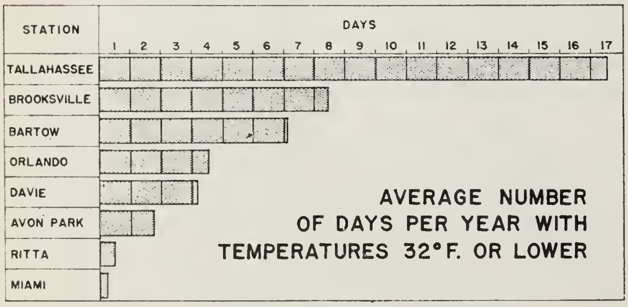


Figure 60B

Since citrus requires much water, the abundant Florida rainfall, averaging 50-60 inches per year, is a favoring condition. But rainfall like temperature behaves unevenly, and dry spells occur, requiring that groves be irrigated from wells or nearby lakes. Figure 58 will give you an idea of how rainfall varies in Florida. The sandy soils usually used for citrus are well drained and easily worked, but they do not hold water well, and rain soaking through them rapidly dissolves and carries many plant food materials below the reach of roots. This leaching necessitates the use of much fertilizer. Soil is fertilized in two ways; by direct application of mineral fertilizers and by planting and later plowing under such cover-crops as beggarweed, crotalaria and velvet beans (Figure 61A). Cover crops add soil fertility, supply bacteria necessary to plant growth, increase the water-holding capacity of the soil, and help prevent erosion.

Harvesting Citrus. The seasonal peak of work in the citrus industry comes during the winter harvesting season from December to March, with some fruit being marketed as late as June or as early as October. During the harvest season large numbers of workers are required for picking and packing fruit. Many of these agricultural workers follow the ripening crops from place to place with the chang-

Figure 61A — Cover crop in orange grove

ing seasons. They are called "migrant workers." In the ridge citrus belt alone it is estimated that 10,000 to 15,000 migrant workers are employed.

The migrant worker presents one of the greatest human resource problems in America. He is necessary to agriculture, but he moves about so much that no community claims him or wishes to assume responsibility for his welfare. He often lives in the poorest houses, sometimes without sanitation, and must travel great distances in uncomfortable trucks or jalopies from one job to another. His children are so frequently transferred from one place to another that they attend school for only brief periods with long gaps between. The plight of these people is being recognized and their problems studied.

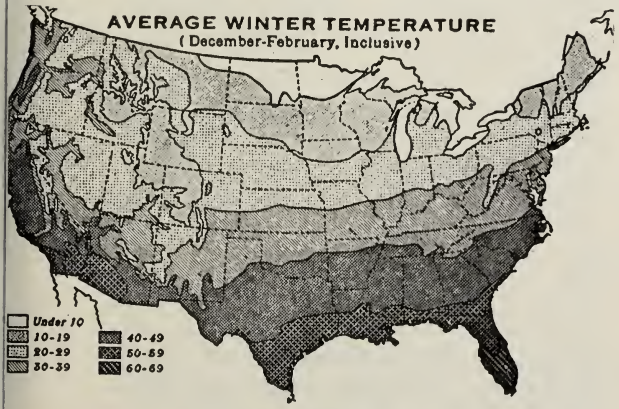


Figure 61B

Although it is difficult to determine the exact number of people connected with citrus production in Florida, it is certain that an industry which produced over 100 million dollars in 1952 employs many thousands of people. Caring for nearly thirty million trees is itself an enormous task. Picking, hauling, packing and shipping the fruit also employ many people. What at first sight appears to be a romantic and glamorous industry is actually one requiring considerable scientific skill and plenty of hard work.

Competition in citrus fruits is very keen and becoming more so. Other states with warm climates are increasing their production rapidly. The map in Figure 61B will show you one reason why these other states can produce citrus. On this map temperatures for the three winter months are shown as a single average. Does the 60 degree temperature line shown on this map and on the map of Florida, Figure 57, suggest to you an advantage which Florida citrus growers have over other citrus states?

Marketing Citrus. Florida growers are well aware that the quality of fruit and the marketing service must be maintained and improved if the industry is to meet competition and continue to thrive. In recent years the practice of shipping green and inferior fruit to northern markets by selfish growers to profit from the high prices of early fruit has been greatly reduced. State laws and voluntary associations of growers have contributed to the improvement of the industry. The establishment, a few years ago, of the Florida Citrus Commission to regulate the shipping, packing, and advertising of citrus fruit and to inspect the fruit marketed, has helped greatly to improve the reputation of Florida fruit. The State Marketing Bureau and the system of State Farmers' Markets have also helped to improve marketing practices and make it possible for farmers to market their crops more easily and profitably.

Figure 62 shows the citrus production of leading citrus states in 1949. What state is now the leading producer both in volume and and in value of fruit produced? In 1939 the average price of Florida citrus was about $13 per ton, while California fruit averaged $27 per ton. Ten years later, in 1949, Florida's fruit averaged $55 per ton while California's averaged $53 per ton. How much did the value of Florida's fruit increase over that of California in this period? Can you suggest some of the reasons for this improvement in the price of Florida fruit? Notice that Florida produces most of the nation's limes and very few of its lemons.

Dade County produces over three-fourths of all the limes grown in the State (Figure 63A). The Florida keys, which once produced all the limes grown in America, are no longer large producers.

Exploitation of the Keys for tourists and winter visitors helps explain the decrease in production of limes. More important, however, is the introduction of Persian

CITRUS PRODUCTION OF LEADING STATES, 1949

	Florida (*thous.*)	*California* (*thous.*)	*Texas* (*thous.*)	*Arizona* (*thous.*)	*United States* (*thous.*)
Value of Citrus Products..	$161,868	$146,859	$ 14,165	$ 5,436	$328,956
Oranges:					
Number of trees..........	18,917	20,562	4,056	684	44,682
Tons harvested...........	2,084	2,040	82	43	4,266
Value of product..........	$117,931	$91,144	$4,689	$2,963	$217,353
Grapefruit:					
Number of trees..........	6,046	885	5,245	713	12,889
Tons harvested...........	833	90	186	94	1,203
Value of product..........	$43,038	$3,346	$9,464	$2,301	$58,149
Lemons:					
Number of trees..........	32	5,904	37	75	6,047
Tons harvested...........	1	643	*	2	647
Value of product..........	$141	$52,319	$12	$172	$52,644
Limes:					
Number of trees..........	355	32	**	**	387
Tons harvested...........	8	1	....	....	9
Value of product..........	$759	$50	....	....	$809

*Less than 500 tons.
**Less than 5,000 trees.

Figure 62

*** EXPLORING FOR YOURSELF—By interviewing local officials of the Exchange, Mutual, Clearing House, Farmers' Market, or Citrus Commission, find what these agencies have done to help growers. If none of them has offices in your community, you may secure information by writing to them.

LEADING COUNTIES IN PRODUCTION OF LIMES, 1939 and 1949

	1949		1939	
	Production (thousand pounds)	*Per Cent of State Total*	*Production (thousand pounds)*	*Per Cent of State Total*
State	15,175	100	5,822	100
Dade	11,904	78	3,162	54
Polk	1,346	9	424	7
Highlands	927	6	364	6
Pasco	282	2	65	1
Monroe	189	1	1,359	23

Figure 63A

and Tahiti limes. These hardier strains are larger and can be grown farther north than can the Key Lime, which is very sensitive to frost. The limestone soil and warm climate of south Florida are well suited to the production of limes.

Lemon production, once quite important in Florida, has declined sharply since the big freeze of 1894-1895. Control of the lemon scab disease has been a serious problem. Production of lemons in Florida is quite small compared with that of other citrus producing states.

Citrus producers have faced many problems in creating the largest agricultural industry in Florida. Freezing weather and the moving of the groves southward have already been mentioned, as has the problem of controlling unwise marketing procedures such as the shipping of green and otherwise inferior fruit. Irrigation, fertilization, and cover crops have been used to increase the yield per tree. However, in some places considerable erosion has resulted during heavy rains from failure to use cover crops (Figure 63B). Prices vary greatly from year to year, depending upon employment and wages in the North, the Florida weather, and the size of the citrus crop. This problem is of great concern to Florida growers' for it often determines whether they make a profit or take a loss on their crop.

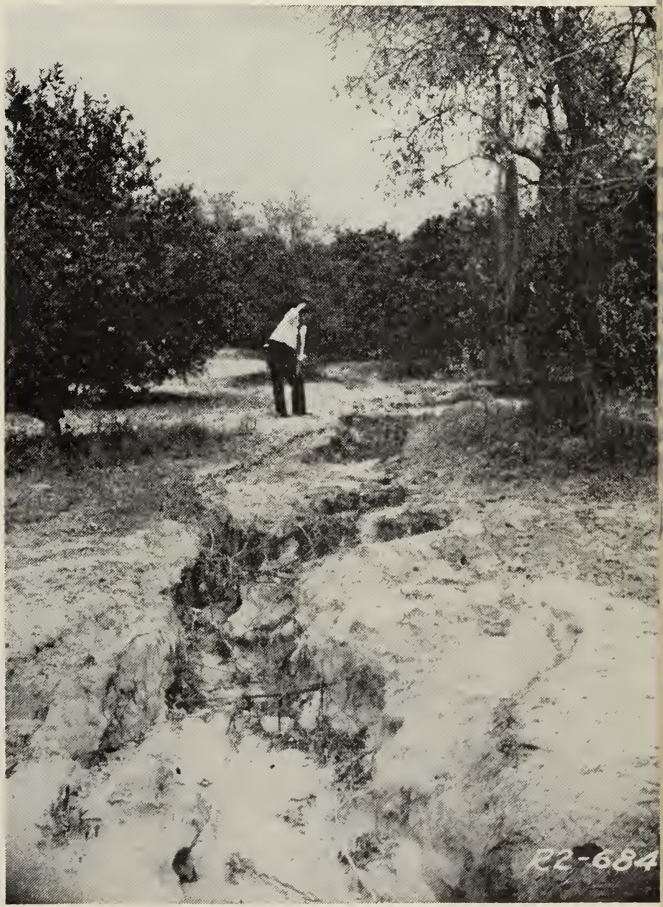


Figure 63B — Erosion in citrus grove

VEGETABLES HARVESTED FOR SALE, 1949

State	*Acres*	*Value*	*Value per Acre*
Florida	256,355	$159,742,708	$233
California	537,681	180,862,162	336
New York	206,830	37,154,194	180
Texas	436,235	31,751,720	73
New Jersey	143,590	26,324,569	183
Georgia	132,540	9,930,114	75
Maryland	103,869	9,808,008	94
Pennsylvania	101,361	15,795,747	156

Figure 64A

The introduction of canned and frozen juices and concentrates has helped to stabilize marketing. Future security may depend on maintaining a good quality product.

In addition to the problems already mentioned, citrus growers must contend with insects, diseases, and occasional hurricanes that destroy blossoms and fruit and injure trees. Hailstorms sometimes knock off fruit and blossoms. Many of these losses cannot be prevented, but growers and the Agricultural Experiment Stations are constantly at work in various parts of the State trying to find ways to reduce losses, improve the varieties of fruit, and solve other problems in connection with growing and marketing citrus products.

Culls, (fruit not suitable for shipping because of size, shape, color, or skin defects) were formerly thrown away. Most of this fruit can now be used for canning or for making other by-products. Canned or frozen juices and concentrates are the major use of such fruit, and can now be found in grocery stores all over the Nation. As the citrus canning industry has grown, producers have found a new market for citrus. Canning companies often buy the entire output of many large groves. More than half of all the oranges are processed rather than sold fresh. Canning waste is pulverized and processed into a satisfactory food for cattle, or made into fertilizer to return to the groves. As experimentation continues, other new uses may be found for citrus.

TRUCK FARMING

The second most valuable group of highly specialized farm products in Flor-

ACREAGES AND PRODUCTION OF LEADING CROPS, FLORIDA, 1949

Crop	*Acres*	*Per Cent of All Cropland*	*Value of Products (thous. $)*	*Value per Acre*
Tree fruits, nuts, grapes, and berries	501,181	21	$172,776	$345
Vegetables	256,335	11	159,742	233
Corn	528,742	22	10,345	20

Figure 64B

ida is known as truck crops. In 6 of the last 18 years truck crops have been more valuable than citrus. Vegetables grown for sale contribute most of the value of Florida's truck production. Figure 64A shows for eight leading states including Florida the number of acres used for vegetable production and the value of the crops produced. How do these Florida figures for acreage and value compare with those for other leading crops (Figure 64B)? If you will look at Figure 65A you can see what the ten leading vegetable crops were in 1952, how many acres were grown, and how much each of them was worth.

LEADING 10 FLORIDA VEGETABLES HARVESTED FOR SALE, 1951-1952 SEASON

Vegetable	*Acreage Harvested*	*Total Gross F.O.B. Value (thous. $)*
Tomatoes	55,900	$50,670
Beans	76,700	18,801
Potatoes	29,500	18,523
Celery	10,400	14,735
Watermelons	68,000	12,947
Peppers	11,150	10,200
Cucumbers	13,600	9,999
Cabbage	15,500	9,664
Corn	33,500	8,955
Squash	10,700	2,911

Figure 65A

Florida also produces a great variety of other vegetables, including eggplant, lettuce, sweet corn, cauliflower, okra, onions, carrots, spinach, broccoli, escarole, endive, romaine, and rhubarb. How many of these vegetable crops of the state are familiar to you? Several of them are illustrated in this book. Figures 65B, 65C, and 65D show how some of them look while growing.

Figure 66 shows where the State's vegetables are grown for sale. Compare this map with the one of citrus fruit in Figure 56A. Are these two groups of crops grown mainly in the same places? Compare the vegetable map with map in Figure 31. What relationship do you see?

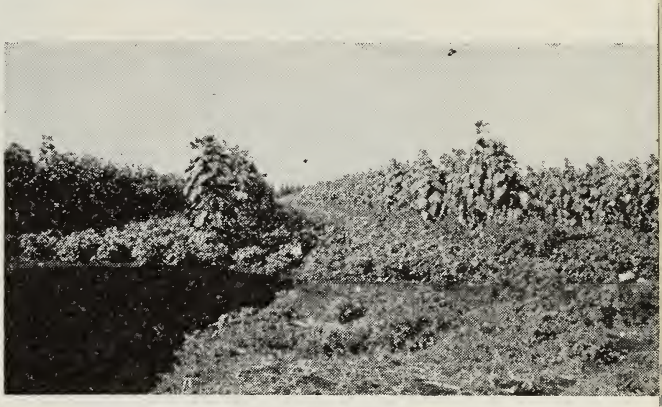


Figure 65B — Beans with sunflowers as windbreak

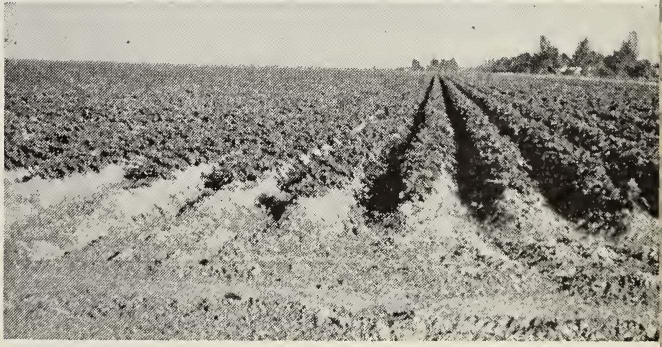


Figure 65C — Irish potato field near Homestead

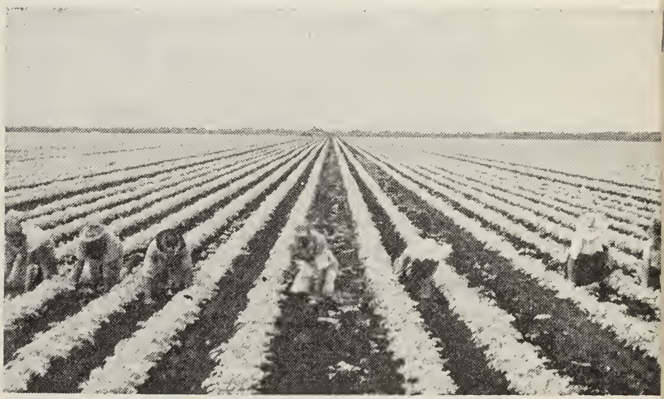


Figure 65D — Celery field near Sanford

The leading six counties by value of vegetables produced in 1950 were as follows:

County	*Thousands of Dollars*
Palm Beach	13,572
Dade	6,837
Seminole	6,787
Broward	5,638
Hillsborough	4,006
St. Lucie	2,693

There is a tendency for each truck-farming area to specialize in a few crops. Sanford is noted for celery; Homestead for tomatoes, peppers, and Irish potatoes; Pompano for peppers and snap beans; and Hastings for Irish potatoes. Reasons for this specialization include the suitability of different muck soils or sandy soils for special crops, the ease with which land is drained, irrigated; relative freedom from frost, and the existence of special marketing facilities. Most vegetables are grown on muck soils, which are more fertile than those in the sandy ridge section where citrus is grown.

The Everglades area south and east of Lake Okeechobee is responsible for much of the recent growth in vegetable production. Large business enterprises have huge investments in truck crops. While there are small truck farms, most of the production is from large farms of 600 acres or more where farming is highly mechanized. The muck soil is very rich because it is decayed vegetable matter 2 to 8 feet thick. However, such land must be drained before it can be used.

By consulting the January temperature map, Figure 57 you will see that, like citrus, most of the winter vegetables are grown south of the 60° temperature line where temperatures are high enough to permit growth during winter. Refer to Figure 60B. Warm winters make it possible to grow and harvest vegetables in south Florida and get them to market earlier than from anywhere else in the Nation. Do these facts help you to understand why Figure 66 shows so many dots in Dade, Palm Beach, and Broward counties? Did you notice some dots on the map north of the 60° January temperature line? These smaller areas farther north in the State grow special early spring and summer crops such as watermelons.

Since the earlier crops of south Florida bring the highest prices and since freezing is less frequent there, the vegetable industry of the State has been moving farther southward for several years. Irish potatoes, for example, formerly were grown in large quantities in Flagler, St. Johns, and Putnam counties, but now Dade County leads in production. Somewhat later in the season, but well ahead of crops in northern United States, vegetables from farther north in Florida reach the market.

In spring, as soon as it is warm enough to grow vegetable crops in Maryland, Delaware, and other states nearer to northern markets, the prices go down.

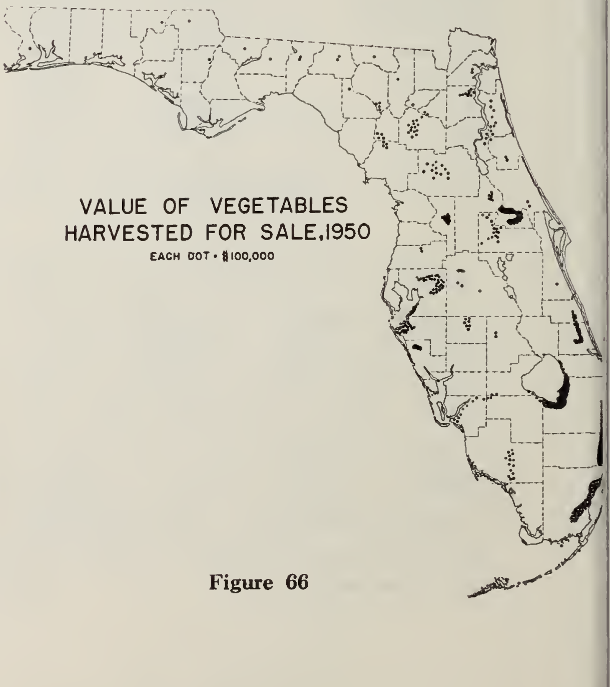


Figure 66

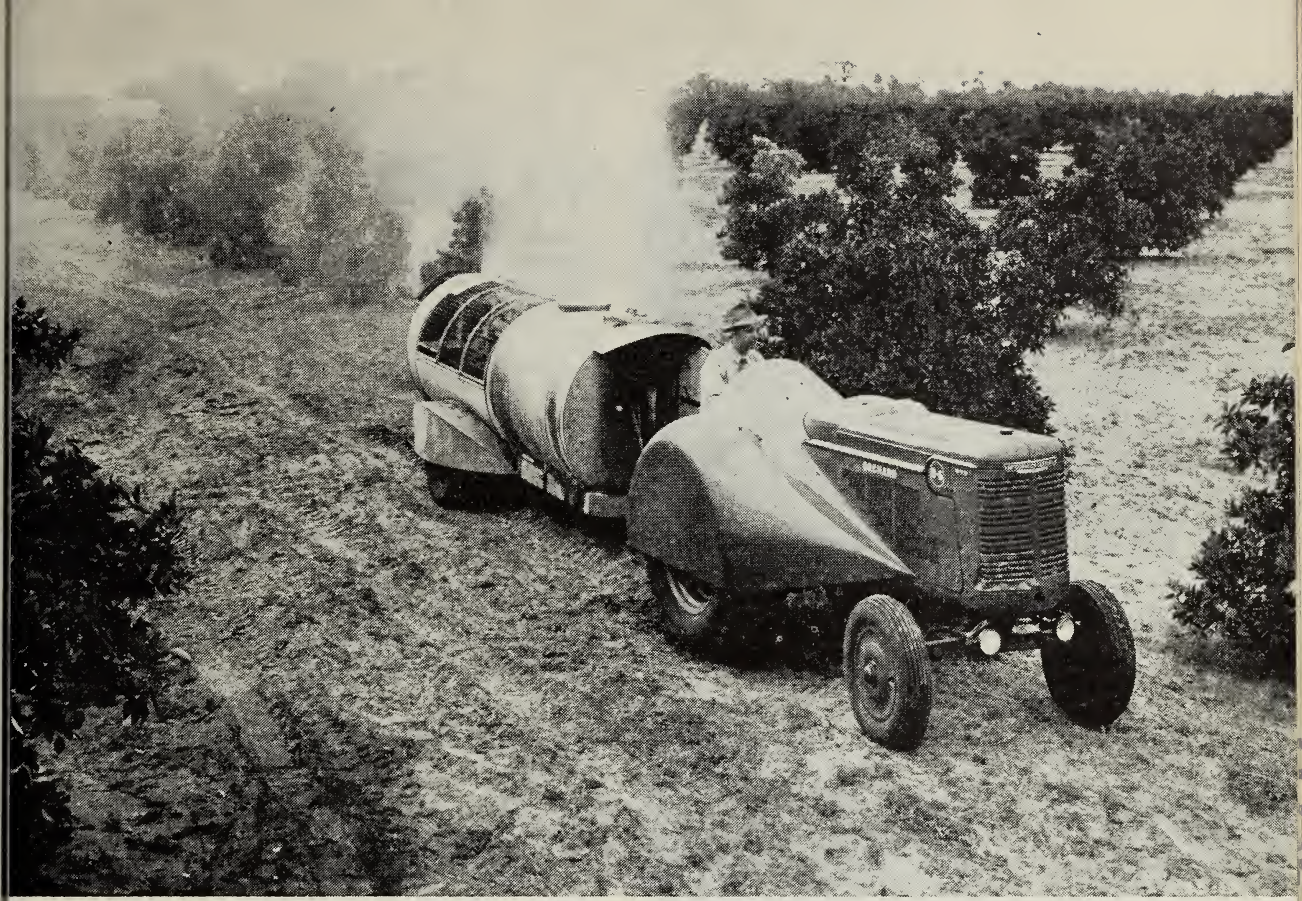


Figure 67 — Spraying crops with insecticide

When this happens, Florida shipments are greatly reduced. Then, thousands of acres of fine vegetables are left in the fields because the price will no longer pay for picking and shipping.

Winter vegetables, like citrus, are highly specialized crops. Large tracts of expensive lands are required. Much of it must be drained and then irrigated at great expense. Mechanical equipment is needed. Losses are frequent and very severe. Sudden freezes can ruin a crop in a few hours, and the truck farmer has less protection against cold than does the citrus grower. Fertilizers cost up to 15 per cent of the total cost of production. Insecticides are 1 per cent to 6 per cent of the cost in central Florida, and from 5 per cent to 15 per cent of the cost in south Florida. Figure 67 shows a farmer spraying against insect pests.

The truck farmer has to be a business man as well as a farmer to make a success of his risky business. Truck farming involves so many people and such a large investment in Florida that every possible means should be used, not only to maintain and improve the industry, but also to improve farming practices and maintain soil fertility.

OTHER SPECIALIZED FARMING

Although citrus and truck crops account for most of Florida's agricultural income, there are many other specialized crops which swell our income. Strawberries rank high as a cash crop in Florida. Florida strawberries ripen earlier than those elsewhere in the United States and therefore bring high prices. The major producing areas are in Hillsborough, Polk, Bradford, and Hardee counties. Figure 68A shows the value of tree, fruit and nut crops other than citrus. How many of these crops are familiar to you? Do you

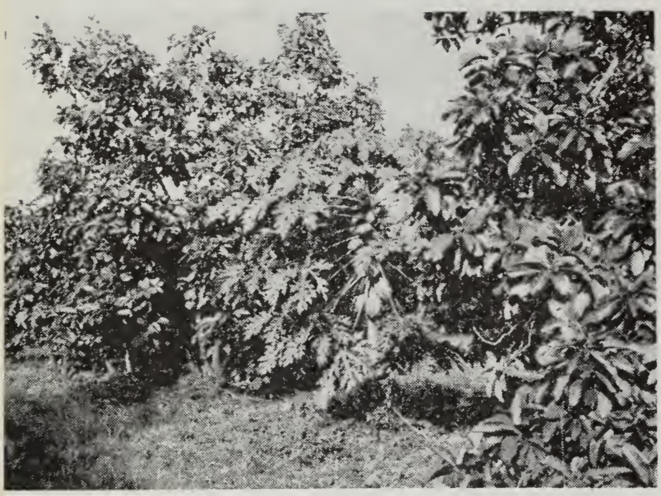


Figure 68B — Papayas and avocados

VALUE OF TREE, FRUIT AND NUT CROPS, OTHER THAN CITRUS, 1949

Strawberries	$1,563,613
Tung Nuts	879,717
Avocados	364,601
Pecans	307,421
Mangoes	304,255
Pears	69,887
Figs	27,577
Pineapples	24,570
Peaches	17,530
Blueberries	13,518
Grapes	13,397
Plums and Prunes	9,135
Coconuts	8,599
Guavas	5,888

Figure 68A

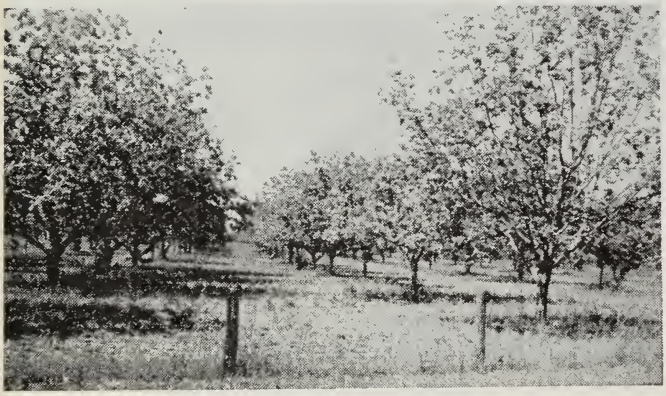


Figure 68C — Pecan grove

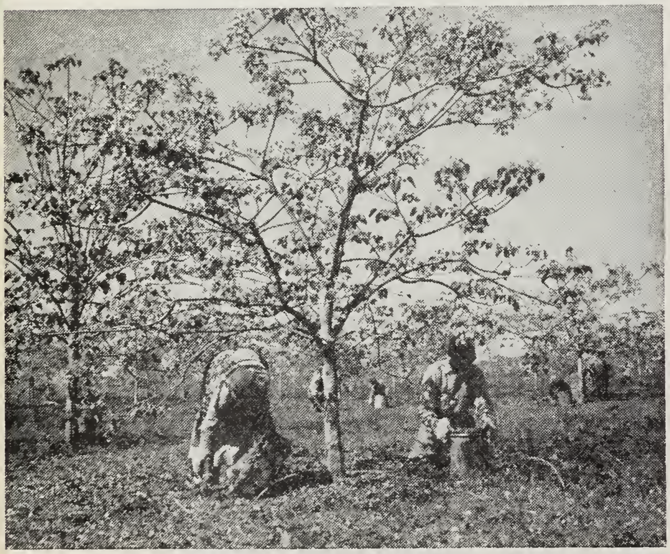


Figure 68D — Tung grove

know which ones are grown throughout the State and which ones are tropical fruits grown only in south Florida? Two of these fruits, papayas and avocados, are pictured in Figure 68B.

Two important tree crops are grown in north Florida. One of these is the pecan (Figure 68C) and the other the tung tree (Figure 68D). Both of these crops require a long, hot, wet summer typical of the subtropics, but grow best where winter temperatures average below 60° F. These trees grow best on the well-drained hilly lands of north Florida where a clay subsoil helps to hold fertility and water and provides a firm anchorage for the tree against wind storms.

Tung trees were introduced from China in 1905, but have been grown commercially only since 1923. Florida produces about one fourth of the Nation's tung oil on about 600,000 acres. The oil from the tung fruit (sometimes called a nut) has many uses, chief of which is in making a waterproof varnish that does not readily crack. Tung oil is essential in time of war for weather-proofing for cartridges and various types of fabrics and in parts for airplanes, tanks and guns. It is also used in paints, lacquers, enamels, and the manufacture of linoleum, oil cloth, automobile top dressings, printing and India inks, and soap.

Other crops that need tropical climates or special soils for successful growing include sugar cane for sugar, kenaf and ramie for fiber, and tobacco. Production of these and other special crops will depend in part on trade with other countries. The mucklands of the Everglades are well suited to the needs of cane. Large corporations grow thousands of acres of cane which is made into raw sugar in a few mills (Figure 69A).

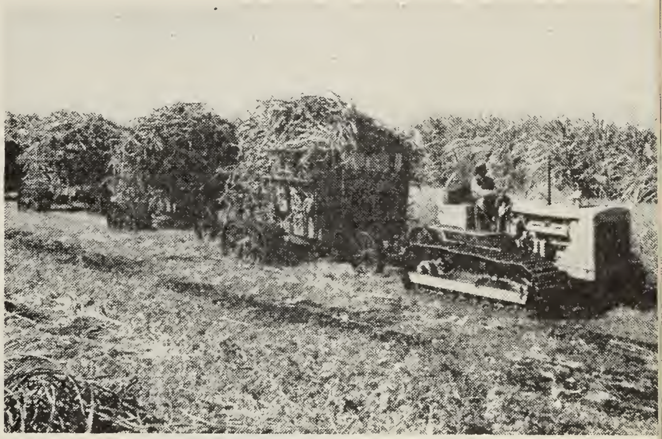


Figure 69A – Harvesting sugar cane

Shade tobacco (Figure 69B) is grown in Gadsden and Madison counties only on special soils which will produce the kind of leaf desired for cigar wrappers. In 1949 this crop was valued at $17,578,000.

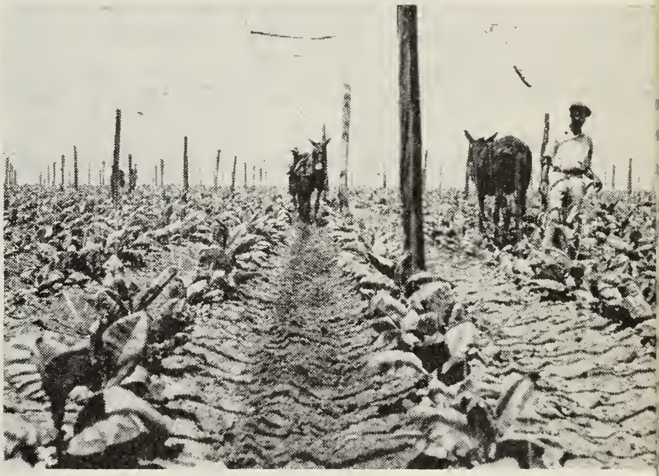


Figure 69B – Shade tobacco

Poultry farming flourishes in some counties as a specialized farming activity. Poultry farms are also found near all cities large enough to provide a market for eggs and chickens.

Dairy farming is a highly specialized form of farming which has moved forward rapidly in recent years (Figure 69C). As larger urban centers develop, the increased demand for milk leads to the creation of larger dairy farms and processing plants. Dairy herds have been improved by scientific feeding and securing better stock. Although milk production has increased 100 per cent in 10 years, Florida still gets much of its milk from other states. Farmers' receipts for two recent years show that dairy products sold exceeded the value of beef cattle sales.

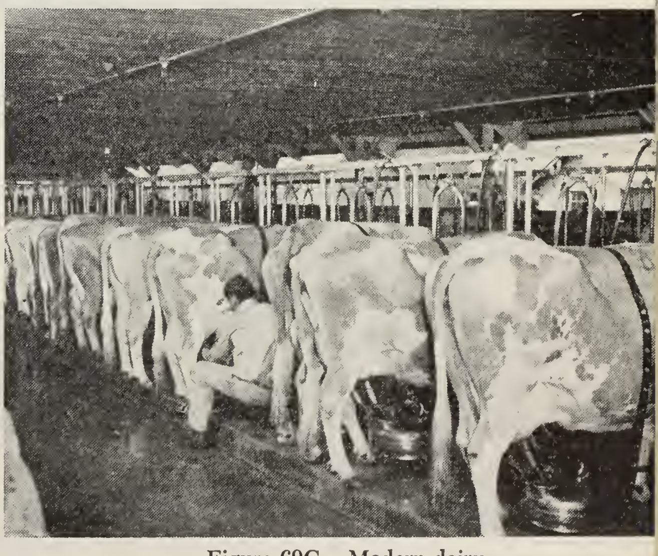


Figure 69C – Modern dairy

Production of horticultural specialties such as nursery crops, flowers, seeds and bulbs should also be mentioned as a form of specialized farming. (Figure 70). Florida's warm sunny winters make it possible to grow many of these plants out of doors the year around.

HORTICULTURAL SPECIALTIES, 1949

Product	*Acres*	*Value*
Nursery Products (Trees, shrubs, vines, ornamentals, etc.)	5,478	$7,245,053
Flowers and Flowering Plants Grown for Sale	12,203	9,484,092
Vegetables Grown under Glass, Flower and Vegetable Seeds, Vegetable Plants, Bulbs, and Mushrooms Produced for Sale	1,642	643,998
Total	19,323	$17,373,143

Figure 70

SUMMARY

Citrus is Florida's most valuable agricultural crop, closely followed in value by truck crops. Both citrus and winter vegetables are produced largely in the warm climate of central and south Florida. Citrus is grown in high sandy soils, while vegetables and other crops are grown in more fertile sand or muck.

Citrus growers are well organized to improve marketing conditions, but vegetable growers usually market their products individually. While many small farms grow citrus and truck, the major part of the production comes from large farms which are heavily mechanized and have very large investments.

Canning and freezing of citrus products have opened a new local market to the citrus industry. Vegetable production continues to be for winter markets, and whether quick freezing for later sale will open new markets or will injure the luxury trade in winter vegetables cannot be forseen at the present time.

All specialized crops require careful fertilization, irrigation and insect-pest control. Irregularities in rainfall and temperature make the growing of both citrus and truck crops somewhat risky. A high market price in out-of-state markets is necessary for profitable production of either crop. Because of the extremely high production costs, scientific management to produce the highest possible yield per acre is necessary for profitable operation in specialized farming.

Chapter 7

Using Florida's Land for General Farming

Your study of specialized farming has been largely a study of farming in central and south Florida. From the maps in Figures 23B, 26, and 54A-54F, what contrasts do you notice between north Florida counties and these specialized farming areas?

You will recall that the high priced special winter crops of south and central Florida cannot be safely and profitably grown north of the 60° F. average January temperature line (Figure 57). Therefore this line may be thought of as separating north Florida agriculturally from the rest of the State. Had you ever thought of using a temperature line as a boundary?

Florida has a small rural farm population (Chapter 2). Consult Figure 54A to see how counties and parts of the State compare in the proportion of population that is rural farm. Note especially the concentration in north Florida. What question is raised by comparing Figures 54B and 54A. Look for answers to this question as you study this chapter and the next two. Figure 54E shows another difference between parts of the State and should raise another question. This question, too, will be answered as you continue your study.

FARMING IN NORTH FLORIDA

General or Diversified Farming. Figures 72A-72B, 72C-72D, 72E-72F, and 73A-73B show some of the crops north Florida farmers grow. These are summer crops, some of which require a long, hot, wet growing season, but which cannot be grown during the cooler winter months

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*** EXPLORING FOR YOURSELF—Where does your county fit into the picture shown by the six maps, Figures 54A-54F? Can you give any reasons for the facts shown in your county in these maps?

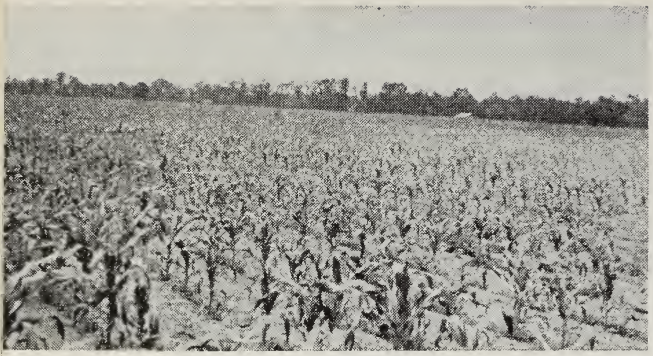


Figure 72A — Young corn

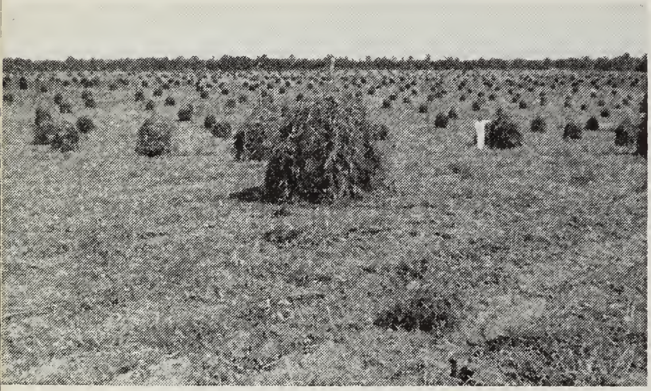
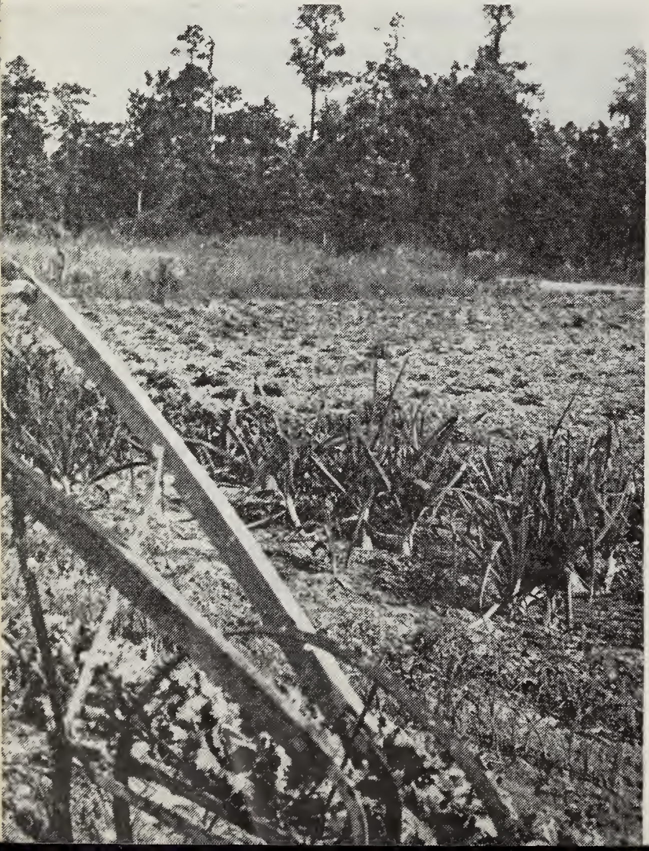


Figure 72C — Peanuts in the stack

Figure 72E — Home vegetable garden



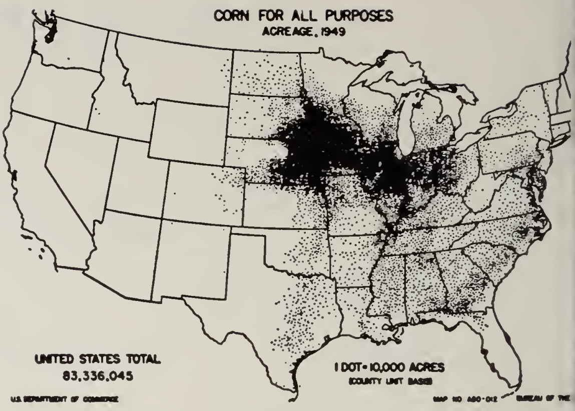


Figure 72B

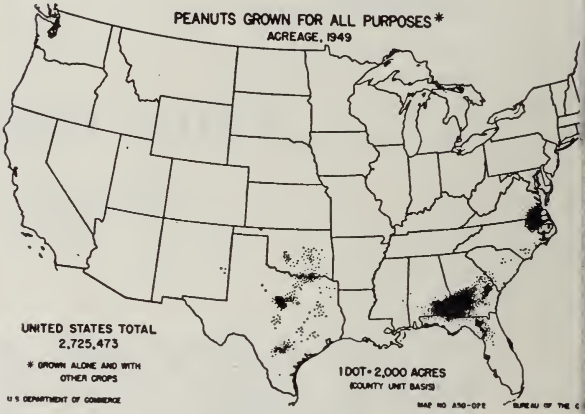


Figure 72D

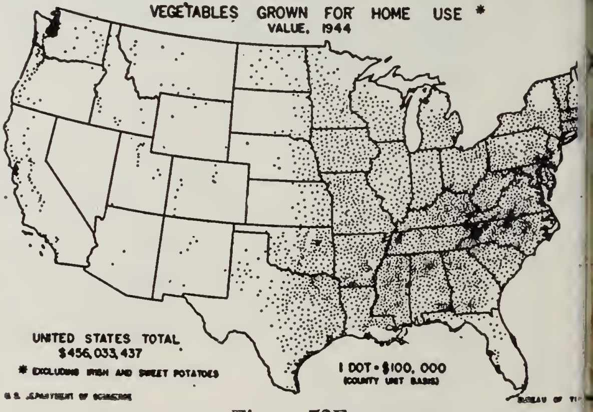

VEGETABLES GROWN FOR HOME USE *
VALUE, 1944
UNITED STATES TOTAL
$456,033,437
* EXCLUDING IRISH AND SWEET POTATOES
1 DOT = $100,000
(COUNTY UNIT BASIS)
U.S. DEPARTMENT OF COMMERCE
BUREAU OF T

Figure 72F

(Figures 58 and 60B). If any crop can be considered the most important in north Florida, it is the one shown in Figure 73C.

Unlike the highly specialized farms of central and south Florida which usually grow one crop, most north Florida farms

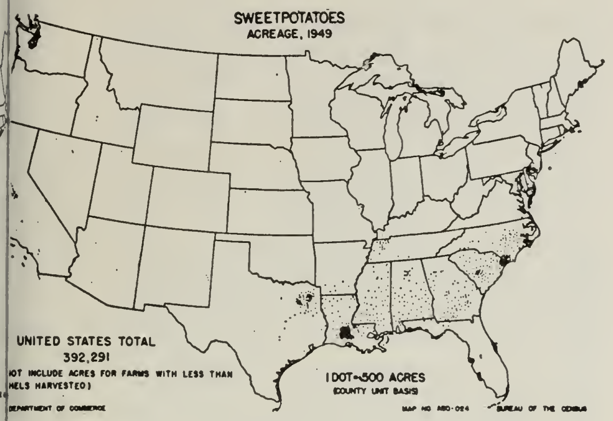


Figure 73A

Figure 73B — Sweet potatoes

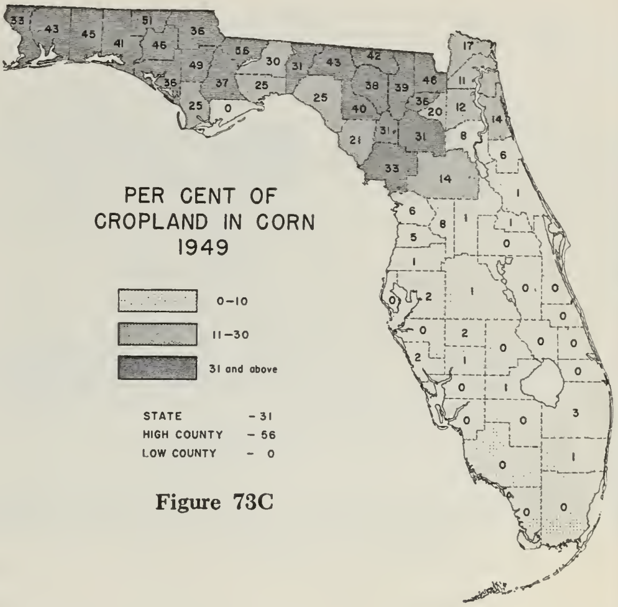


Figure 73C

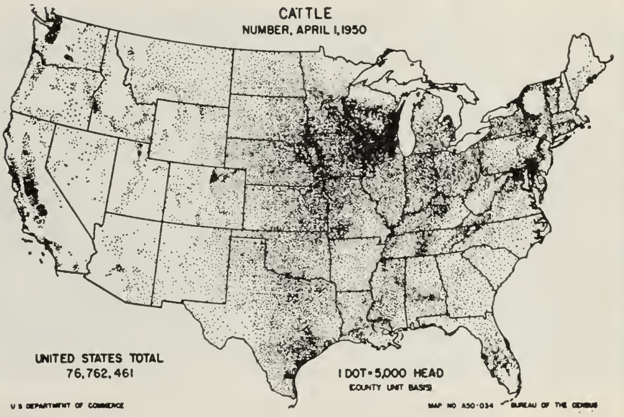


Figure 73D

grow a variety of crops. In addition to those shown in Figures 72A to 73B, there are small fruits and tree fruits, vegetables, pecans, sugar cane for syrup, and watermelons. These farms also have a variety of farm animals for work and for the production of milk, eggs, and meat (Figures 73D and 74). Many of these things are produced primarily for home consumption, with a surplus to sell in market. There often are also woodland tracts that yield firewood, pulpwood, poles, and even saw logs (Figures 35A and 40B). Many of Florida's 55,000 small forest owners are north Florida farmers.

The kind of farming that produces a wide variety of plant and animal products without specializing heavily in any of them is called *diversified* or *general farming*. On some general farms the family may consume a large portion of the grain, poultry, pork, vegetables, and other

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*** EXPLORING FOR YOURSELF — Part-time farms have become common in many areas of the State. You may want to find out from the agricultural experts in your county how many such farms there are and whether or not they are near towns and cities.

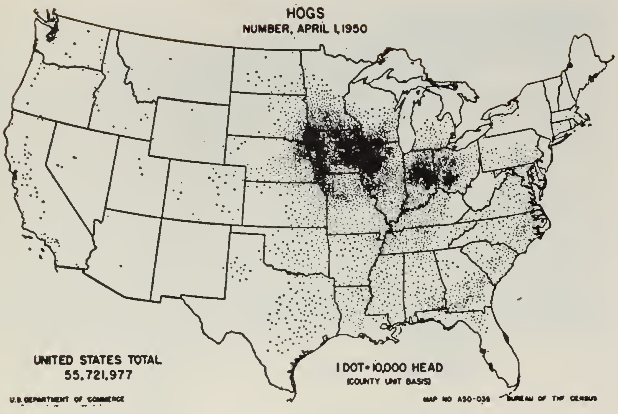

Figure 74

things produced. Such farming is called *subsistence* farming. Some farmers in north Florida divide their time between farming and other jobs off the farm. These jobs may be in forest work, in business or manufacturing in nearby towns, or on other farms as hired hands. The farms they operate may produce a variety of crops and animals, like any other general farm, or they may produce vegetables and chickens for home use only. Farms that supply only part of the income of the farm family are called *part-time farms.*

A Way of Living. Perhaps it has already occurred to you that a people's way of life is closely related to the kind of work they do. For example, workers in turpentine and logging may live in company owned houses or may travel to work each day. City dwellers who work in stores and banks, hotels, and the like will live differently from people who work at phosphate mining or cattle grazing. How many ways of living do you know about in your county? What is your own "way of life?"

General farming may be thought of as a way of living. The general farm family is usually larger than an urban family or a family on a specialized farm. Members of the family work together and play together much of the time, thus developing a feeling of understanding and unity. Each has his place in the scheme of work and is a needed member of the group. At the same time, each assumes responsibility and develops self-reliance and a feeling of independence. Families on other farms in the area have similar lives and interests. Hence community relations are likely to be warm and friendly. Visitors from outside are hospitably received and amply fed. Most farmers are not wealthy; few are poverty stricken. Where equality of status among families exists, it fosters democracy. For example, the hired man may be a neighbor's son and accepted as an equal. At its best a general farming area has a good way of life.

AN OLD FARMING REGION

North Florida is "Old Florida," the only part of the State that had many people before 1900. Reread the first two sections in Chapter 2 under the heading "Peopling Florida" and refer to Figures 12A to 13B. This area with its fertile soils (Figure 31) was one of highly specialized cotton farming, with Negro slave labor. Slavery was established in Florida by people moving in from nearby states. Figure 18A shows that the counties in this part of north Florida still have a high concentration of Negro population. In other sections of north Florida, white workers engaged in general or subsistence farming and cattle grazing. Thus north Florida came to resemble the rest of the Southeast much more than it did south and central Florida. This resemblance still persists.

*** EXPLORING FOR YOURSELF—It is sometimes difficult for us to understand how people live in parts of the State unfamiliar to us. You might like to learn about ways of living different from your own by corresponding with pupils in the same grades in towns or communities elsewhere in Florida. Choose the places to write on the basis of how people make their living using Florida's resources. Your teacher will help you select. You might begin by describing your way of life and asking that your correspondent reply in the same fashion.

SOME PROBLEM CONDITIONS DEVELOP

North Florida has large areas of good land (Figure 31). Still, as you noted, many counties make a poor showing in Figures 54B-54E.

You have already discovered that north Florida cannot grow the high priced winter crops of south and central Florida. The cotton farmers in north Florida grew two row crops—cotton and corn—on sloping lands year after year until the fertility of the soil was depleted and the top soil itself was washed away (Figure 5B). Often general or subsistence farming was carried on by poor methods. Too little care was given seed selection and fertilization of the land. Often the same crop was grown on the same land too many years in succession. These and other poor methods inceased leaching and erosion. As a result, per acre yield grew smaller and total farm incomes lower. Acres in farms and in crops became less as large areas were taken out of cultivation. Forests on farms were badly used also, as described in Chapter 5. A farming region became poor because many of its farmers were not working with nature. Over several decades some of the people moved away to more prosperous places (Figure 15B).

A REGION OF CHANGE

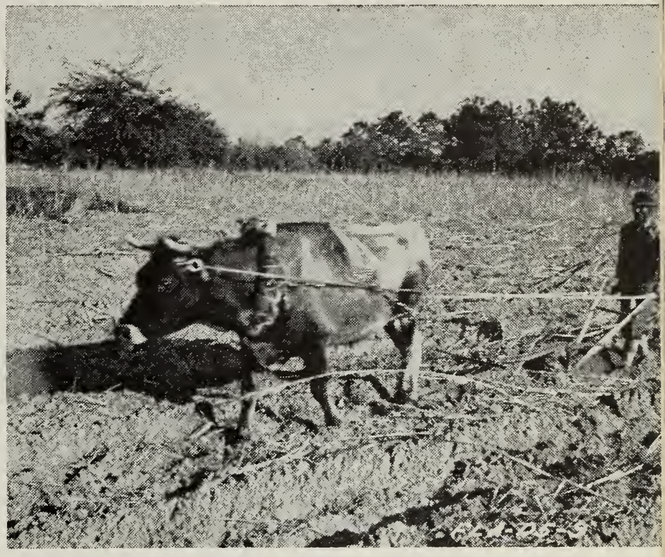

Figure 75A — Primitive farming methods

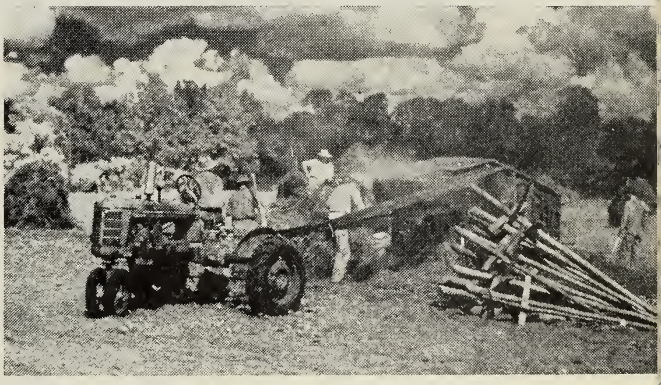

Figure 75B — Threshing peanuts

Slowly but surely north Florida farmers, with the help of national, state, and county agencies, are making better use of their land. If you live in any of the north Florida countries, you may know that tractors and other special farm machinery are replacing small mule-drawn or ox-drawn equipment (Figures 75A and 75B). More fields are kept fertile by proper methods of cultivation, careful seed selection, fertilization, and growing crops in rotation instead of the same crops on the same land year after year.

Assistance in improving the use of land is available from a number of sources that will be discussed more fully in Chapter 9.

*** EXPLORING FOR YOURSELF—Reread the parts of Chapters 1 and 4 that deal with man's unwise use of resources and how such poor practices can be corrected. Are there signs of improvement in land use in your county?

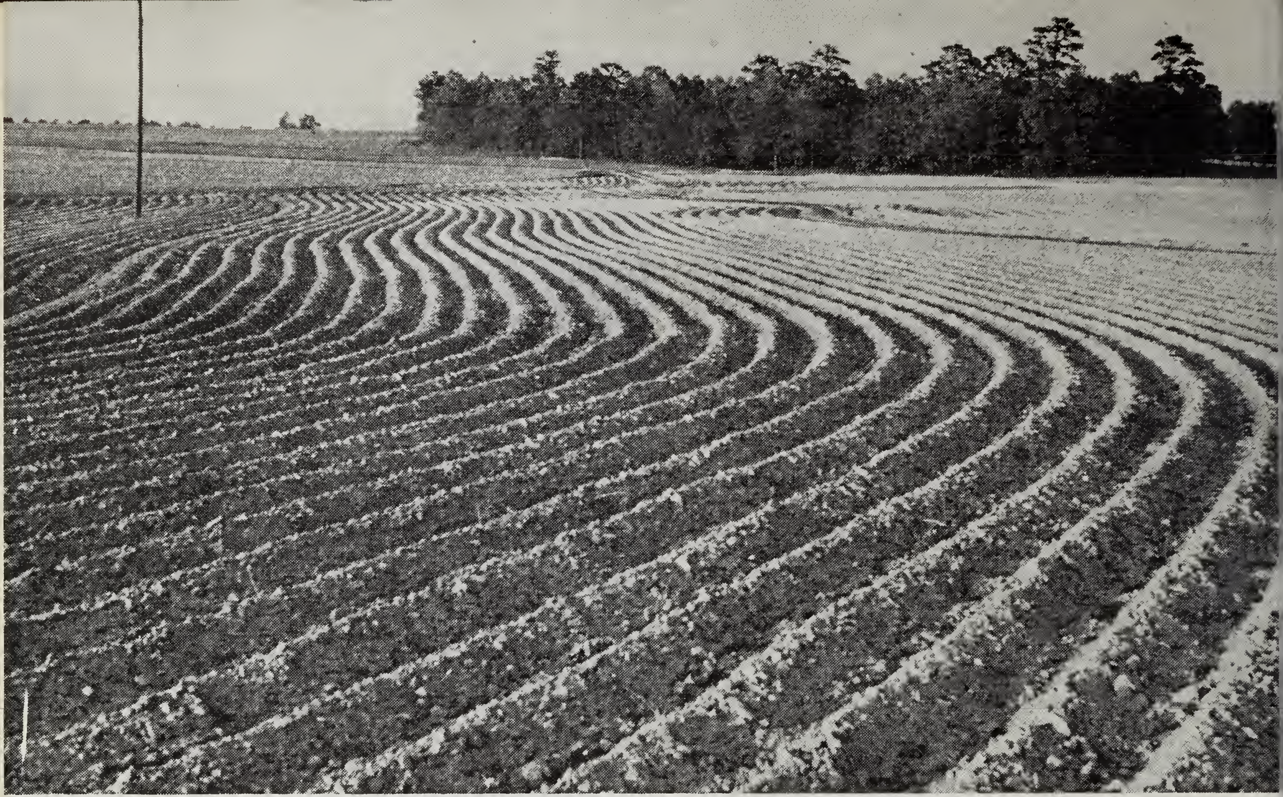

Figure 76 — Land plowed to hold rainwater and prevent erosion

Such people as the County Agricultural Agent, the Soil Conservationist, and the County Farm Forester are always ready to help. State and federal experiment stations develop improved kinds of crops and animals and better ways of producing them. The Home Demonstration Agent assists farmers' wives and daughters with many homemaking activities — canning and preserving of foods, sewing, beautifying both inside and outside of the house, and the like. Four H Clubs and Future Farmers of America help boys and girls learn how to farm. Emphasis is placed on agricultural and home economics education in many high schools. Farmers also learn from one another by exchanging experiences. Successful farming efforts are readily observable and often copied by alert neighbors and friends.

These improvements in farming, strangely enough, provide jobs for fewer workers on farms. The increased use of machinery, called *mechanization of farms,* makes it possible for fewer farmers to cultivate more acres. So farms are increasing in size but decreasing in number. Florida's rural farm population (Figure 54A) was only 8 per cent of the total population in 1950. It may be even less in another decade. Because of increased population in urban centers and in military installations, farmers in many north Florida counties are able to market more of such specialities as poultry, eggs, milk, vegetables, and fruits.

All of these signs of improvement show that people in north Florida have begun to use thought and scientific knowledge in solving difficult resource use problems. There is still much to be done before all of the counties in this part of the state rate high in the ways shown in Figures 54B-54E. But if good practices are more widely applied to the use of farm lands (Figure 76) and other resources, such as forests (Figure 47C), north Florida can greatly increase its wealth and the well-being of its people. You and everyone else in Florida will be interested in watching to see how much progress these counties make in the next few years.

Chapter 8

Using Florida's Land for Beef Production

Cowboys ride the ranges in Florida just as they do in the West. Some of them ride mounts which are descendants of the horses left in Florida by Spanish explorers. In some areas when the cowboy goes into town, he can give his horse a drink in the town watering trough, then tie him to the hitching rail. A rodeo in town attracts people from all the country side and a generous sprinkling of outside visitors. The high-heeled boots, typical cowboy hats, and bright colors add real western flavor to an exhibition of "bulldogging" cattle and riding outlaw horses. A few communities even have the equivalent of a "drive-in" lunch counter, translated into a "ride-in" station, where a sandwich may be purchased without the necessity of dismounting.

If you live in a region in which ranching is an important activity, you have seen many scenes similar to those in Figures 78A and 78B. You may even have visited a ranch and seen such things as the dipping of cattle, branding with the owner's mark, and loading for market. The livestock markets, Figure 78C, are busy places. The sale of beef cattle in Florida realized a total of $33,108,000 in 1952.

WHERE IT IS – REGIONS AND PRODUCTION

Locate the principal grazing regions by finding the counties having the largest number of beef cattle (Figure 79A), and the counties which received the most money for beef cattle sold, (Figure 79B). The largest one is in south and central Florida; it includes Polk, Osceola, Collier, Glades, and parts of adjoining counties. This ranching region is poorly drained, but the soils are fertile enough to grow good planted grasses. There is not likely to be any marked competition from groves and farms for the use of the land because of this drainage condition. Most of Florida's

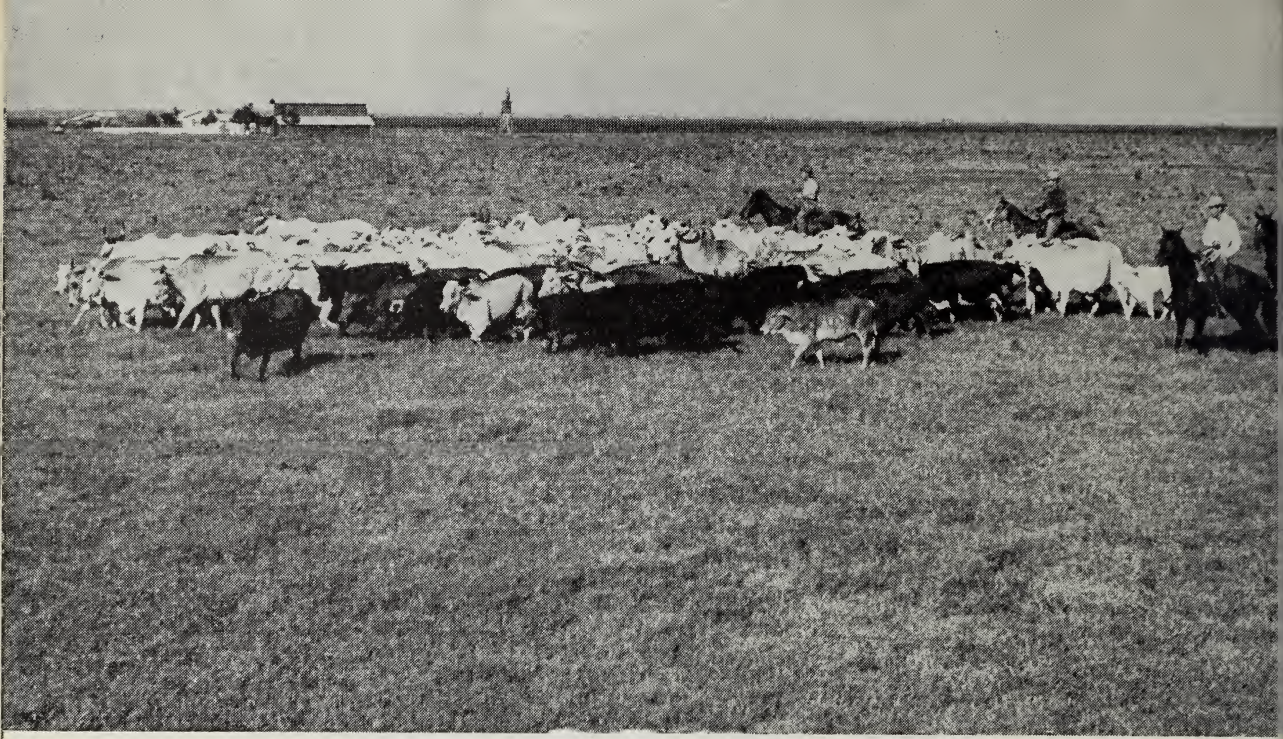

Figure 78A — Cattle ranch

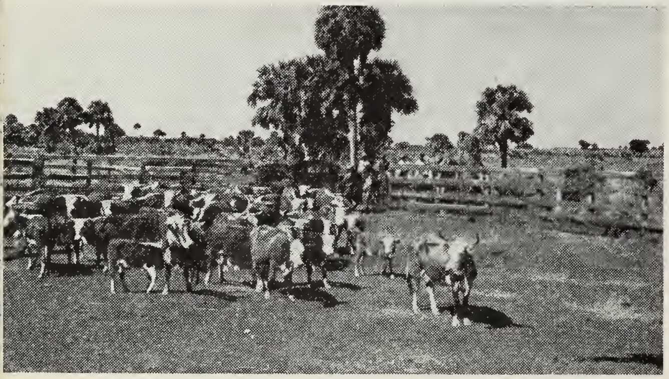

Figure 78B — Seminole Indian cattle

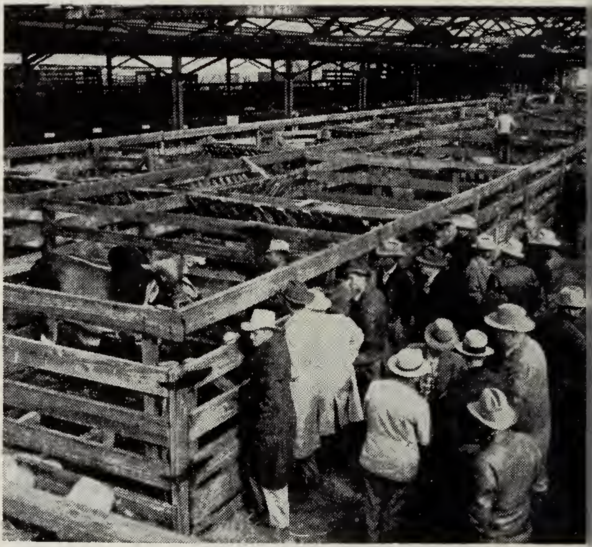

Figure 78C — Cattle market

native grasses are very poor for pasture. Much of the ranch land has had to be prepared for improved pasture by disking the wire grass, scrub palmetto, sea myrtle, and other native vegetation. Use Figure 60B to determine the approximate length of frost free season for pasture grasses.

Most of this region is composed of large ranches (Figure 54D), with native and improved pastures, but in the southeastern part a specialized type of ranching is found. Here on the drained mucklands, beef cattle are grazed on forage crops in rather small pastures. Refer to Figure 79B to find the comparative rank of this area. Some vegetable growers are combining this with their farming operations; others are adopting it as a more stable source of income.

The next region, in size and value of beef cattle sold, centers in Marion County. This grazing region has slightly smaller herds and ranches. It is one of somewhat higher lands and has better drained soils. Some low-lying prairie areas support heavy growths of native grasses. However, here, as in the other regions, many acres have been planted to improved pasture to help provide better feed for more months of the year.

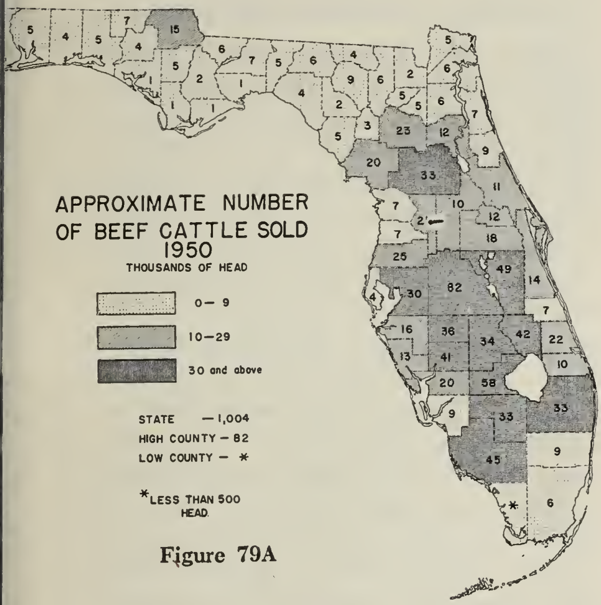

Figure 79A

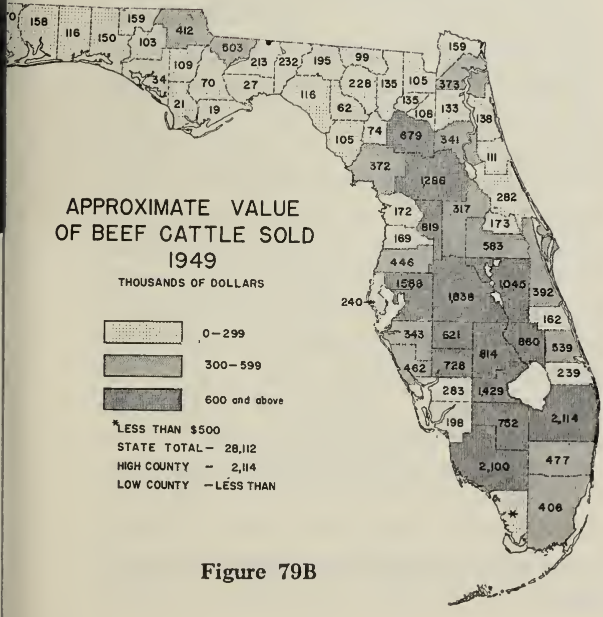

Figure 79B

Refer to the maps in Figures 79A and 79B again. Look at the cattle producing counties of north Florida. This region is one where feeding and grazing of planted crops is common practice (Figure 79C). It is a rarity to find a range like those in south-central Florida.

You have already studied about farming and know the areas which produce crops. Find on the map in Figure 31 those areas which are not well suited to agriculture but which could grow pasture for cattle. How do these compare with the regions shown on the maps in Figures 79A and 79B? Use the maps in Figures 79B, 54B, 54D, 54E, 54F, and 31 to see if you can determine the counties in which beef cattle farming is the principal industry. Remember what you learned in Chapter 7 about beef cattle and general farming. As you study these maps, see if there are areas which are unproductive at the present time that could become grazing lands in the future. From Figure 23A you will notice that agriculture, which includes all types of farming, employs more people than any other basic industry. It is very difficult to separate the ranchers from the farmers in Florida. Many ranchers grow field crops for feed or grazing, and many farmers feed and graze some cattle. Thus you see that there are two

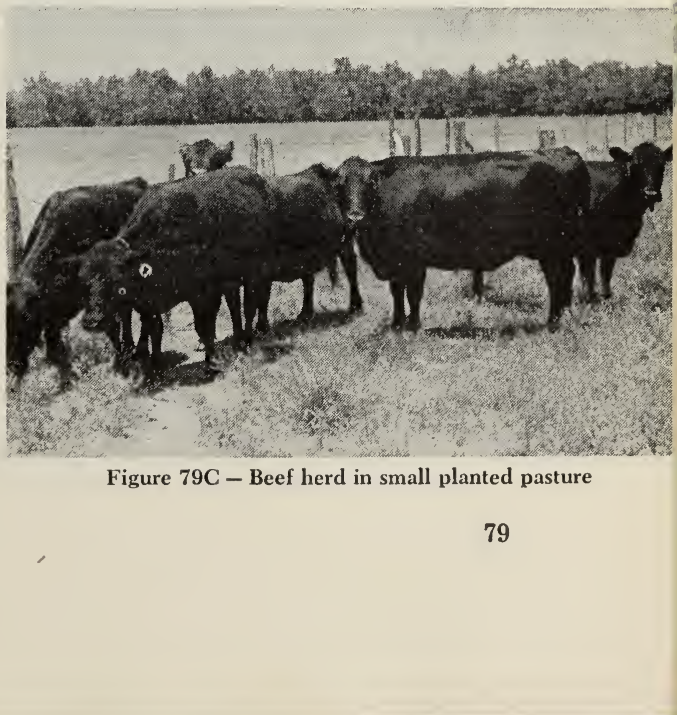

Figure 79C – Beef herd in small planted pasture

types of beef production in Florida: the range herd (Figure 78A), where the animals have large areas over which to graze, and the farm herd (Figure 79C), where there are fewer animals and smaller pastures.

HOW IT BEGAN—EARLY HISTORY

Florida is the oldest cattle grazing state in the Nation, but it is just now beginning to show its potential importance as a beef farming region. Ponce de Leon brought cattle from Cuba to Florida in 1520. DeSoto probably brought the second lot in 1539, when he landed at Charlotte Harbor. Menendez brought some from Spain to the east coast after he destroyed Ft. Caroline. Strays from these and stock brought from other states formed the basis for the herds of range cattle belonging to the early settlers and to the Seminoles. As these early cattlemen acquired herds, they were confronted with such obstacles as the cattle fever tick, poor pastures, "salt sickness" and other nutritional diseases, in-breeding, and a lack of knowledge of herd management.

During the early nineteenth century a ranching industry developed along the St. John's River, between Gainesville and Ft. Myers, and in northwest Florida. Better grass lands were found near rivers and lakes, and waterways were used as the best means of transportation at that time. After 1860, thousands of grass-fat steers were shipped to Cuba. It required days to drive these cattle over the trails from ranges to shipping points. Charlotte Harbor and Punta Rassa in the south and Pensacola in northwest Florida were the principal exporting centers. During the 1880's Florida ranked with Texas in the export of beef cattle, which, though smaller, were of a higher quality.

The cattle industry received a great impetus when Flagler and Plant built and consolidated the railroad system. With rail transportation available, beef cattle became Florida's leading industry. This continued until the turn of the century, when the development and expansion of the citrus industry began to exceed it.

DETOURS ALONG THE WAY

About 1934 the *screw worm fly outbreak,* spreading into the northwestern part of the State from adjoining states, caused the herdsmen to give careful attention to the inspection and treatment of their cattle. As it did not pay to treat scrubby range cattle, many of them were sold. During a period of years beginning about 1920, the *cattle tick infestation* and the outbreak of the screw worm fly reduced by approximately half the number of cattle in Florida. Some years later intensive campaigns resulted in the control of the fever tick and screw worm fly, and by 1940 the total number of cattle in Florida was almost equal to that reported in 1920. As the number increased, so did the quality, with improved breeding and feeding on improved pastures.

Prior to 1949, *fences* in Florida to control the movement of range cattle were almost unknown. Cattlemen had claimed the right of allowing their herds to graze all uncultivated land. They built few fences and sometimes even cut those built by the farmer and lumberman, to allow freer grazing. As improved breeds appeared on the range, fences were erected to protect the cattlemen's investment. Arguments raged in the state legislature over the fencing problem in relation to highway and railroad safety. Finally in 1949 legislation was passed making it mandatory to fence grazing lands.

In addition to the ravages caused by

*** EXPLORING FOR YOURSELF—Find out as much as you can about the history of Paynes's Prairie in Alachua County.

parasites and the problems of fencing, cattlemen faced the problem of many thousands of acres of *tough, relatively unnutritious grasses* and the *lack of improved breeding stock* which could withstand both the sub-tropical climate and the diseases. Also, the conflict between the lumberman, the farmer, and the rancher over the *burning of lands for grazing* raged for many years. Local droughts, vast areas of flooded lowland pastures in years of excessive rainfall, drought or feeding problems in other ranching states, poor national market conditions, and even international conditions, such as outbreaks of hoof and mouth disease, cause "ups" and "downs" in production of beef cattle in Florida.

IMPROVEMENTS ALONG THE WAY

Development of Pastures. The open, unimproved range, which produced a gaunt, stringy, tough breed of cattle, was the basis of the industry until the first quarter of the twentieth century. In their search for food, cattle roamed the woods, swamps, and abandoned fields, as well as the grassy strips along the railroads and highways. In many sections the woods and prairie lands were burned over annually in an effort to give the cattle tender young growth, which, following the fires, replaced the tough, dead grass of the previous season. As herds of purebred cattle were introduced into the state, cattlemen became concerned with both fencing the grazing areas and developing good pasture lands. Refer again to Figure 61B. Florida's mild temperatures permit longer grazing than any other section of the Nation, and except for occasional drought, the average rainfall (50-60 inches) assures sufficient moisture for pasture growth. Natural pasture vegetation is being mixed with or completely replaced by improved grasses, clover, and several leguminous forage crops. Fertilizers containing calcium, nitrogen, phosphorus, potassium, and some of the minor elements are necessary for good pasture production. In addition to improved pastures, many cattlemen provide supplemental winter feeding of citrus and cane molasses, citrus pulp, ground snapped corn, cottonseed meal, and other feeds.

Improved Breeding. The native scrub cow furnishes the basis of the beef cattle industry. She provides a hardiness and grazing ability to withstand the tough range conditions. As cattlemen found it profitable to improve their herds by using pure sires, it became apparent that Brahman bulls (Figure 81) crossbred with native and improved stock produced qualities of hardiness, grazing ability, and freedom from disease. In addition, herds have been up-graded by the addition of Hereford, Angus, Shorthorn, Devon, Red Polled, and others. There is some difference of opinion among cattlemen as to which breed is best for Florida, but they recognize that the breed which has the most advantages for the particular location should be selected. An increase from less than 10 purebred herds in 1929 to about 600 now shows the development of improved herds. However, there is

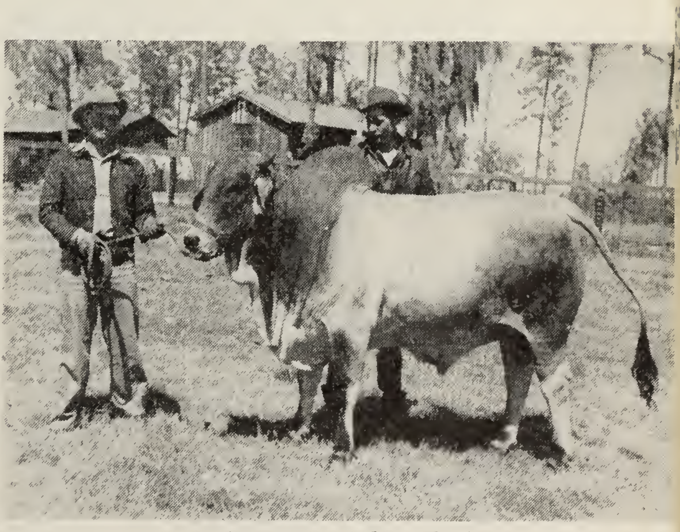

Figure 81 — Brahman bull

need for more emphasis on improving the quality of Florida's beef cattle. At the present time only a small percentage of the high quality beef consumed in Florida is produced here.

Changing Marketing Practices. While many of the cattle produced in Florida are slaughtered locally, some are still shipped outside the State to be fattened. Most of the cattle marketed in Florida are sold as fat calves at 6 to 9 months. This trend has put meat of good quality and type on the market. The older steers when marketed sell at a lower price because they produce a meat lacking in tenderness and quality. Most cattlemen find it advisable to market their steers at two years of age or less.

The increase in the beef cattle production has been reflected in the growth of livestock markets. At least 10 meat packing plants and abattoirs have been added since 1935. Cattle by weight produce about 55 per cent dressed beef; the rest is utilized in the manufacture of many by-products. Today there are 26 livestock auction markets, 7 cooperatives, and many cash markets. The establishment of livestock shows and the work of the Florida State Cattlemen's Association, the State Marketing Board, and Florida Experiment Stations, have helped improve marketing practices as well as the quality of cattle and pastures.

WHAT OF THE FUTURE?

During the decade 1940-1950 Florida has increased the number of its beef cattle by 64 per cent and is the fastest growing beef cattle state in the country. But the State produces only about 60 per cent of the beef it consumes, and very little of the high quality beef consumed here is produced in the State. To supply its needs, cattlemen have to increase the amount produced and at the same time continue to improve the quality. From your study of Florida's land, do you believe that this is possible? Also, consider the combination of forestry and cattle raising. Reread the statement near the end of Chapter 5 on this combination. Some people believe that it could insure a better income for a time at least from some of the lands not suitable for agriculture (Figure 31). In the past these lands have often been tax delinquent or have barely provided a living for the owners.

Chapter 9

Using Florida's Land: Land Use Problems

Florida is a land of agricultural contrasts. Successful, wealthy farms adjoin the worn-out lands of impoverished share croppers. Intensively cultivated lands may neighbor large tracts of land used only as winter homes or hunting preserves. In different counties the average farm income varies from $1 to $203 per acre, and the average farm size varies fom 73 acres to 1,244 acres. Useless cut-over forest tracts adjoin profitable, well-managed forest farms. The crops produced in Florida range from the corn and hay of the northern United States to tropical fruits not grown in the United States outside of Florida.

When such contrasts exist, it is difficult to get a true picture of how Florida uses her land. However, certain generalizations can be made, and problems in land usage can be pointed out.

Figure 31 shows that much of Florida's soil is relatively poor in native fertility. The use of such soil presents many problems and requires careful management if we are to use it wisely. While most of it is best suited for timber, much of it can be used for other purposes if we replace what we take out of it, and enrich it with mineral and natural fertilizers; if we drain areas that are too wet, and irrigate lands that are too dry. Since these processes are all laborious and expensive, it is clear that much of our land can be used economically only if the market price of our produce is high enough to justify such expenditures. Florida's market, pricewise, depends upon marketing at the time of year when other large areas producing similar crops cannot compete.

Many other crops which do not return such high prices can be grown only in the more fertile soils of the state. Corn, cotton, peanuts, sweet potatoes, for example, can be grown in northern Florida with crop rotation, green manure, and lighter fertilizing.

The use to which land is put changes as man's needs for products of the soil change, or as market prices fluctuate, or as man learns to use land more wisely and profitably. You have seen several examples of this in the foregoing pages. The soil-depleting cotton plantation eventually gave way to land-enriching general farming. Citrus and vegetable production moved southward to escape frost. Open woodland became pasture, and increased demand for tung oil led to large profitable groves of tung trees, opening new wealth from unused acres.

Florida is still an agricultural frontier. It is too soon to say with certainty what our land should be used to produce or for what it may be used in the future.

PROBLEMS IN FLORIDA LAND USE

If were are to conserve our land and make it more productive, we have many problems to overcome.

Fertilization. Florida's soils are subject to severe leaching because of their sandy nature and the heavy rainfall which washes minerals out of the surface soil. Vegetables grown on sandy soils require 1½ to 2 tons of fertilizer per acre. Muck lands need one fourth to 2 tons per acre to produce vegetables. Sandy clay loam soils being subject to less leaching, require less fertilizing, but they too need the addition of some minerals and organic matter. Leaching can be considerably lessened by using cover crops and by mulching to keep the land covered as much as possible. Leguminous cover crops also return minerals, principally nitrogen, to the soil. While many progressive farmers use these practices, many farmers in all parts of Florida fail to profit from them.

Erosion. Florida soils are not subject to severe erosion except in the hilly sections of the central and western counties. One third of west Florida shows some erosion. Several thousand acres are severely eroded. In the upper ridge district of central Florida, a considerable acreage shows moderate erosion and some severe erosion. The lower ridge region and the areas of sandy soils show only slight erosion. Figures 5B and 63B show the effect of water erosion. Wind erodes soil by blowing it away, as is shown in Figure 84.

Only recently has Florida recognized that erosion is a problem. The topsoil that has washed or has been blown away cannot, of course, be recovered. But further erosion can be checked by using cover crops to protect the soil, by terracing gently sloping land, by plowing on the contour, by planting grass on steeper slopes and by insuring the maximum amount of vegetation on idle land. Are these practices generally used on farms and groves in your county or is your farmland being washed to sea in muddy streams "too thin to plow, too thick to drink"?

War on Insects. Warm climates are generally more hospitable to fungi, bacteria, and insects than are colder climates. Many bacteria and insects are of course useful, but Florida has its problems in controlling unfriendly or destructive pests. Practically all vegetable crops grown in the

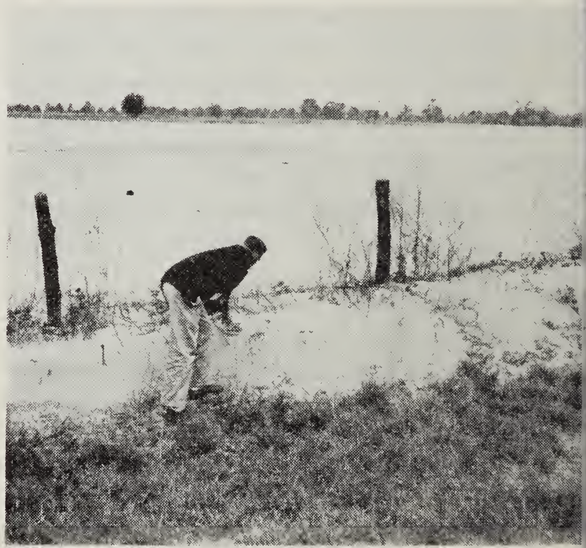

Figure 84 – Wind erosion in north Florida

State must be sprayed with insecticides if man himself is to get a chance to eat them. Fruit and berry crops require careful attention if they are to escape being devoured or diseased. Insects have their favorite foods just as well as you do, and thus certain crops are subject to invaders that do not affect other crops. The "white fly," for example, is a small white fly that sucks its nourishment from the leaves of the citrus trees. The tree's efforts to protect itself cause it to exude a waxy substance on its leaves, thereby reducing photosynthesis. As a result the tree produces poorly and sometimes dies. Spraying with an appropriate insecticide will control this scourge.

Microscopic animals, called nematodes, live in the soil and attack the tender roots of crops. In some organic soils they thrive so well and multiply so rapidly on a tomato root diet that tomatoes cannot be grown in two successive years. Thus new land is often cleared annually and the old fields planted to non-susceptible plants.

Many of our worst pests are not native to Florida, but have entered in diseased crops and animals. Millions of dollars were spent eradicating the cotton boll-weevil, which worked its way across a thousand miles of cotton lands before reaching Florida. The Texas fever tick got a free ride from Texas to Florida attached to the carcass of some long forgotten steer. The screw worm reversed Horace Greeley's advice and came east in the same manner. The Mediterranean Fruit Fly may have crossed the ocean on an orange. Many other plant diseases were brought here by man's carelessness or lack of knowledge, and liked their new surroundings. Now that they are here, of course, we must contend with them for the products of our soil. Insecticides keep most of these insects under control, and hardier strains of crops are sometimes resistant to fungi. Some diseases, like Lemon Scab, we cannot yet control. Insecticides used in growing some crops may cost up to 15 per cent of the growing cost.

Many tropical diseases – plant, animal, and human – would thrive in Florida's warm hospitable environment if they should be accidentally introduced from other regions or countries. Care must be exercised to prevent the entry of new invading immigrants. Each international port or airport has a quarantine station to protect people from these insect saboteurs and bacterial brigades.

Soil Conservation. Many problems of conservation have been discussed in this book. No farmer can be expected to have all the scientific knowledge about soils, forestry, erosion, drainage, irrigation, fertilizers, grass, livestock, etc., necessary to solve the problems that he must face. Nor can he have all of the large special machinery needed for ditching, tree planting and other conservation practices.

Recognizing that a fertile soil is basic to our continued strength as a nation, the state and federal governments have inaugurated programs to provide the technical and scientific help farmers need to utilize, enrich, and preserve our most precious possession – the soil.

Many agencies take part in these programs. County Agents and Home Demonstration Agents are provided in each county, through the cooperation of state and federal governments. Other agencies provide specialized help in other fields.

Soil Conservation Districts are local self-governing associations formed and operated by farmers to help them find and apply the best modern farm practices. They receive technical, educational, and financial help from the state and federal governments. Since 1938 there have been 57 soil conservation districts formed in Florida, including 28,374,640 acres, or about four fifths of the land in the State. Soil conservation service technicians survey these districts, and at the request of individual farmers, assist them to make plans for the best use of the farmer's land. If the farmer signs an agreement with the District to apply the plan to the operation of his farm, he receives help from the District in carrying out the recommended improvements. Soil conservation plans have been made for about 27 per cent of Florida's farms. These plans cover about two thirds of the total acreage in conservation districts.

*** EXPLORING FOR YOURSELF—If you live near an international port or airport, you can interview the officials of the quarantine station to learn what protective measures are employed against the invasion of tropical diseases, plant, animal, and human.

A comparison of the work completed in conservation districts with the estimates of what needs to be done, indicates that we have just begun to treat our wounded soil. Nearly two thirds of the land which should be plowed on the contour to prevent erosion is not yet properly plowed. The same thing is true of steeper land which should be terraced. About one eighth of the land which should be irrigated is under irrigation. Of the poorly drained fields that need drainage to carry off excess water, only one seventh are properly drained. For every acre of trees that farmers have planted on their land, another 9 should be planted. Of the land which should be improved pasture, not more than one sixth has been planted and improved.

These figures underemphasize the fine work being done by one fourth of the farmers. The challenge to improve our soil is being accepted by Florida's people. We may expect that as the fields of progressive farmers become more fertile and more profitable, other farmers will see the wisdom of scientific soil usage and adopt soil conservation practices.

If you are interested in getting more detailed information about soil conservation practices in your county, you can secure it from your local Soil Conservation District, or technicians of the Soil Conservation Service. If you are not in a conservation district, your County Agent can give you valuable information about farming practices. Figure 86 will show you what counties of the State are in soil conservation districts.

Tenure and Size of Farms. The South as a whole has long had a system of farming called share-cropping. Share croppers operate small plots of land under the supervision of the land-owner, who finances their operations and collects half of the crop as rental for the land. The abuses of the land associated with soil-depleting cotton-share farming, and the exploitation of ignorant croppers by some unscrupulous landowners, have resulted in general disapproval of share-cropping. Florida is less severely affected by this problem than are most of her neighbors. Only 5 per cent of Florida's farmers are sharecroppers. They farm an area of 733,000 acres, as compared with 14,000,000 acres farmed by owners.

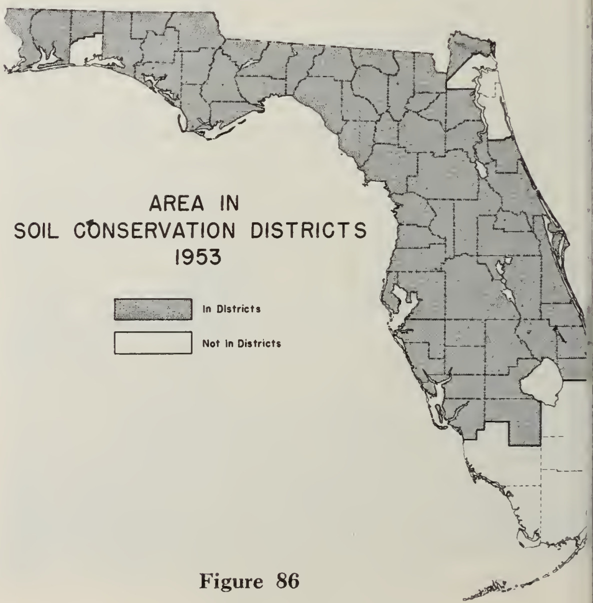

Figure 86

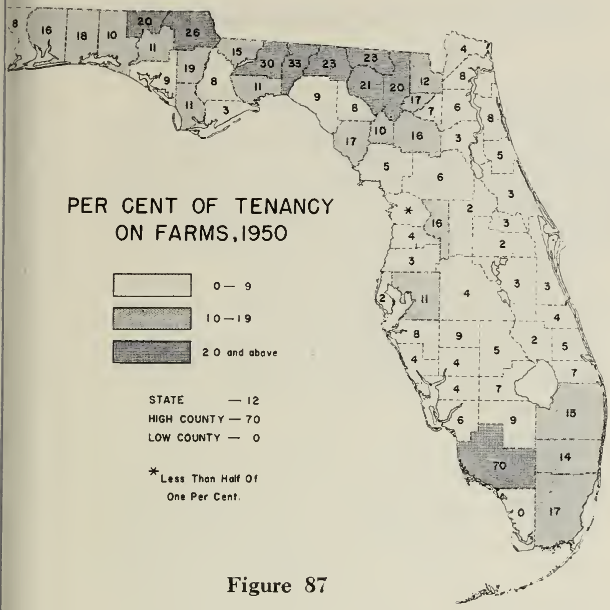

Figure 87

Cash tenants, or farmers who rent land from others for a cash rental, constitute about 12 per cent of Florida's farmers. Many of these farmers, like croppers, operate small farms and make only a poor living. Others, however, are large scale farmers or corporations who rent all or some of their land. Figure 87 shows you the percentage of tenant farmers in each county. The high percentage of tenancy in Collier and Dixie counties is partially explained by the fact that a large part of the land in these counties is owned by a single family or corporation, and farmers must rent the land from them.

One of the more serious problems of Florida's agricultural economy is the large number of farmers who own farms that are too small and too poorly operated to make a decent living. Over half of Florida's farms are under 50 acres in size. Some of these farms on suitable soils may provide a living for their owners from vegetables, horticultural specialties, poultry, or other specialized operations. Too many of them, however, are simply small, badly-managed farms. It is estimated by soil conservationists that in north Florida a family cannot make a living and build up their soil unless they have between 100 and 200 acres of land. Yet, two thirds of the farms in this area are under 99 acres in size, and 80 per cent of these undersized farms are less than one half the recommended size.

Gradually these small farms are becoming parts of larger farms, as people sell out and move to urban areas to make a living. The number of farms is decreasing throughout Florida, and the size of the farms is becoming larger.

Hidden Hunger. All human requirements for life and growth come from the soil in the form of plant or animal life used for food. At least 20 minerals are needed for healthy bodies and sound minds. All evidence points to the fact that if these elements are not in the soil, they cannot be in the food produced on that soil, and are, therefore, not available to man. Plants will grow and animals will exist when some of the natural elements are lacking, but there is a lack of vitality and endurance which would come from proper diet. Tomatoes, for example, grown on fertile soil contain several times the nutrient quality of those grown on poor soils. Cows fed on good

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*** EXPLORING FOR YOURSELF—Is your county in a Soil Conservation District? If not, should it be? Why? If it is, ask your soil conservationist to explain to your class how individual farms are serviced. Get your soil conservationist and/or your county agricultural agent to take your class on a field trip to see good and poor farm practices in your county. Ask him about such problems as soil erosion, leaching, fertilization, insects, size of farms, etc. Visit any agricultural experiment station that is near enough to find out what work is going on there to help farmers.

alfalfa produce 5 times as much vitamin A as when fed on ordinary hay.

In certain districts of Florida where the predominant soils were deficient in iron, copper, and cobalt, between 52 per cent and 96 per cent of the children were found to be anemic. But in districts where the soil contained enough of these elements, less than 25 per cent of the children were anemic.

In Florida we know that our soils require supplements. As much as two tons of chemical fertilizer per acre are often added to our soils to induce plant growth. But in fertilizing our crops we have been concerned with plant requirements, not with human requirements. We add large quantities of nitrogen, potassium, phosphorus, and lime (calcium), needed by plants, but we add the trace elements necessary to make foods nutritious only if the plants will not grow well without them. The sensible thing to do from the nutritional viewpoint would be to analyze the soil and add to it not only the elements needed for plant growth, but also those elements that plants need to nourish men. It might be cheaper in the long run to do this than to permit 40 per cent of our people to suffer from malnutrition. And it would certainly be cheaper than trying to make up for food deficiences by buying vitamins and minerals from the drugstore.

Little has been done yet to improve the nutritional qualities of Florida's produce. But we can hope that in the future nutritional characteristics will become the measure of a crop's value, and feeding men will receive as much attention as feeding hogs.

SURFACE AND UNDERGROUND WATER PROBLEMS

Drainage in the Everglades and irrigation of citrus, which have already been mentioned, should make it evident that the control of water for agricultural purposes in Florida is a dual problem.

Water is a mineral resource, but it is considered here as a problem in land usage, for its availability and supply have an important bearing on whether land is used and for what purposes it is used.

Florida is rich in water. Rainfall is more abundant than in most of the United States, providing ample water for growing of crops, maintaining large underground reserves, creating thousands of lakes, ponds, swamps, sloughs and the broad shallow river known as the Everglades. This great wealth of water may create many problems, while it solves others. High, well-drained areas can be used for agriculture with less risk of drought than in much of the Nation. But the same abundant rain subjects these areas to erosion and leaching.

Irrigation. Even places with abundant rainfall, however, experience growing seasons in which rainfall is inadequate to meet the needs of crops. The irregularity of rainfall, shown in Figure 58, increases this hazard. Such dry periods, or *droughts*, often kill, or reduce the yield of thousands of acres of crops. Sandy soils do not hold water long and thus need water more often than sandy-loam soils. Citrus and vegetable growers often pump water from nearby lakes or wells to water their crops in dry weather. Farmers with streams on their land may do the same thing. Everglades farmers pump water from their land when too wet and pump water back on it when it is too dry.

*** EXPLORING FOR YOURSELF—Talk to agricultural experts and home economics teachers about "hidden hunger." Read *Relation of Soil Content to Human Longevity* by T. J. Brooks and T. J. Brooks, Jr., State Department of Agriculture, Tallahassee.

In the ten years between 1940 and 1950, the use of irrigation in Florida more than doubled. Over 170,000 acres of cropland and nearly 70,000 acres of pasturage were brought under irrigation. While these figures may be small compared with arid western states, they represent 96 per cent of the irrigation being done in the southeastern states, and reflect the poor water holding capacity of most of Florida's soils.

Since water in Florida is abundant, and applying it to crops at the right time increases yields, we may expect the practice of irrigation to continue to grow.

Drainage. Great areas in Florida, including some of its richer soil, are covered by water. Much of the lower land is subject to flooding periodically, and crops are often subject to damage when heavy rain raises the water table too close to the surface for plants to thrive. Such areas can sometimes be used profitably by providing local drainage, either by ditching, or by use of subterranean tile or mole drains. Figure 89 shows a main drainage ditch in a system designed to drain 600 acres.

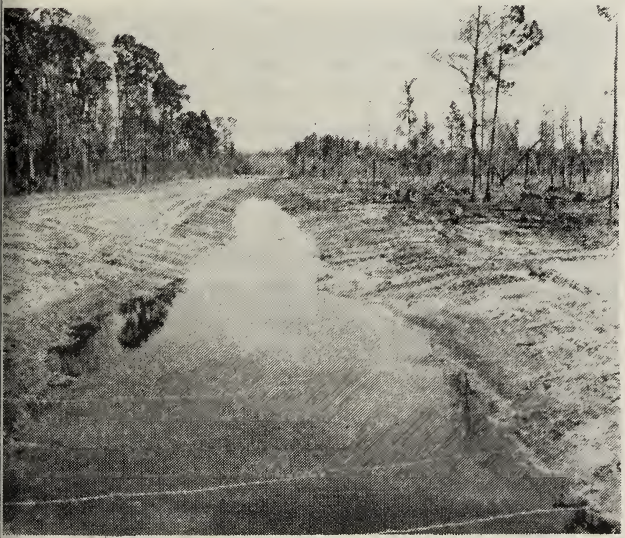


Figure 89 — Drainage ditch

In part of the broad area south of Lake Okeechobee, known as the Everglades, drainage has made possible the use of many thousands of acres for raising of cane and truck crops. Unfortunately, attempts at drainage of the whole area were made and have resulted in destroying much of the peat soil. Early speculators and interested persons believed that all central and southern Florida could be made profitable for agriculture simply by digging a few canals which would drain the land and open up an agricultural paradise. Engineers and others warned that uncontrolled reclamation of the Kissimmee-Okeechobee-Everglades watershed would result in destroying the natural balance of the region. Failure to reclaim and develop much of the Everglades in a planned series of progressive units has resulted in a great soil loss that could have been largely prevented. The peat and muck soils of the Everglades are organic (composed largely of plant remains), which when dry will burn. Much land has been lost through Everglades fires such as the one shown in Figure 90. The most serious loss of such soils results, however, from slow oxidation caused by action of bacteria, which attack the muck as soon as drainage admits air into the soil. These bacteria must have free oxygen to live, and so the deeper the water table is lowered, the greater the volume of dry aerated soil, and the greater the soil loss due to oxidation.

Drained Everglades soils have lost about 40 per cent of their original volume in the 40 years since drainage began. This process is called *subsidence.* By the year 2000 it is estimated that 88 per cent of the cross-sectional area of these soils will be gone and cultivation will no longer be possible on most of it.

While the subsidence of peat soils cannot be stopped, it can be slowed down by wise usage. Flood fallow, or keeping

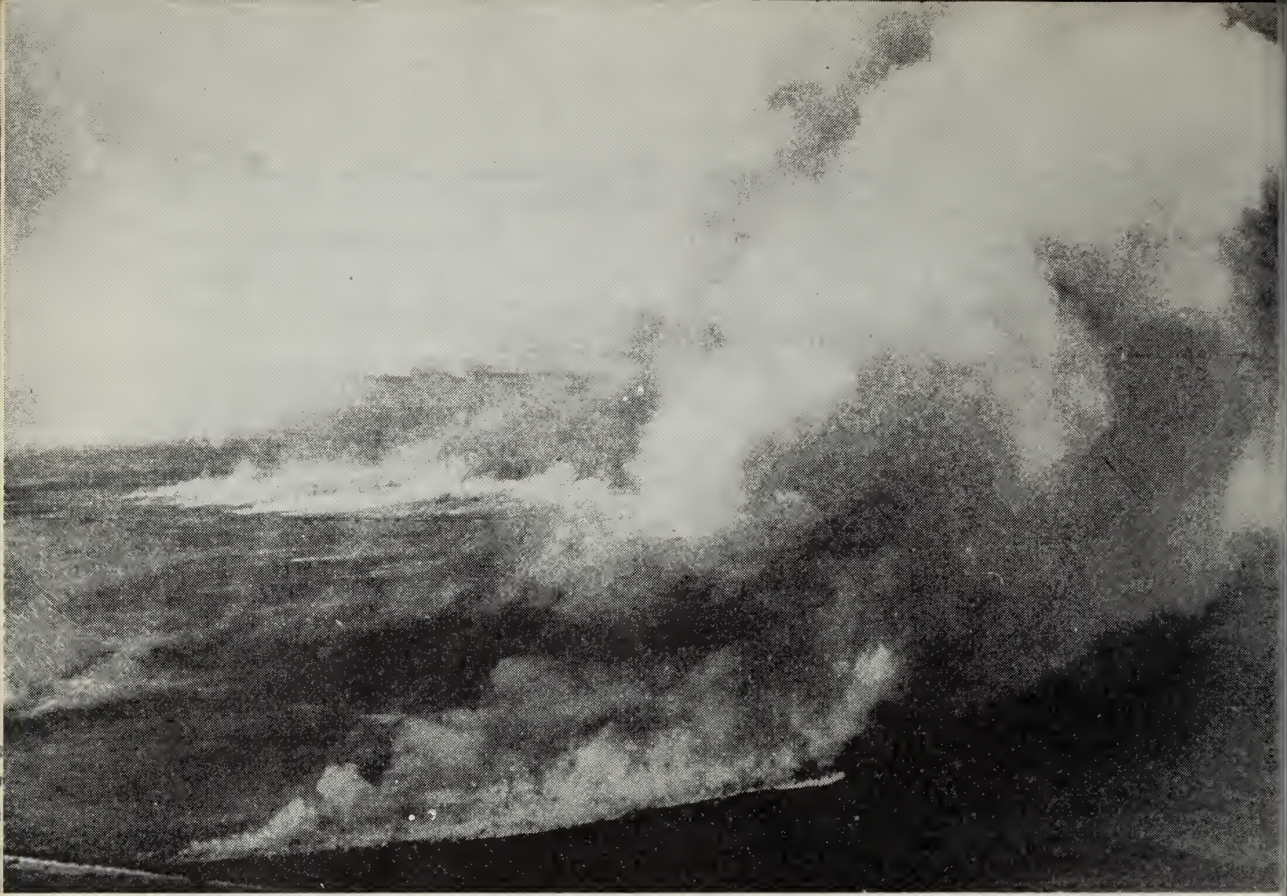


Figure 90 – Everglades soil on fire

the land covered by water during nongrowing periods, will deter subsidence by stopping the action of the aerobic bacteria during that part of the year. Keeping the water table as high as is consistent with crop gowing, by avoiding overdrainage, will reduce the rate of subsidence. Some of the shallower soil should be used only for grass and pasture.

The original canals for drainage of the Everglades are not well suited to the needs of the area. In dry seasons they overdrain the land, increasing subsidence and the danger of fire. In wet seasons they cannot drain off the tremendous volume of rain water; thus floods in wet years are as great a hazard as is fire in the dry years. Figure 91A shows a flooded city street in Miami. Twenty other cities were flooded at the same time.

Flood Control. The Central and Southern Florida Flood Control Project is an effort to restore a balanced water control plan to the 5 major drainage basins of central and southern Florida.

Included in the project is over one fourth of the land in Florida (Figure 91B): the drainage basins of the upper St. Johns River, the Kissimmee River, the Lake Okeechobee basin, the Everglades area, and the southeastern coast.

The average annual damage from floods in this area is 11½ million dollars. The 1947 flood, which inundated 500,000 acres for over a month, is estimated to have caused between 60 and 100 million dollars worth of damage. In 1948, the area from Lake Istakpoga, south of Sebring, to the tip of the peninsula was under water. Figure 91C shows a flooded ranch near Sebring. Other floods in 1940 and 1946 caused considerable damage. In years when rainfall was lighter, fires raged in peat soils. Large fires occurred in 1939, 1941, 1943, and 1945.

The control project would establish levees, canals, and control works in the

St. Johns basin west of Cocoa and Eau Gallie; new canals west of Ft. Pierce would protect the St. Lucie River basin. The Kissimmee River Valley would be protected by 100 miles of canals and improvements in nine lakes and the river. The levees, along the south shore of Lake Okeechobee, built by the federal government at a cost of 25 million dollars, would be extended to encircle the lake with artificial banks. Levees around the most productive thousand square miles of the Everglades would permit effective control of water levels by 8 pumping stations. The east coast will be protected by levees which will enclose 1500 square miles of less useful glades land in conservation reservoirs. These reservoirs, and the lakes in the upper system, will serve the dual purpose of storing excess waters to prevent floods and of releasing water in dry periods to keep the water table near the surface and help prevent fires.

Much of this federal project has already been authorized by Congress, and work is in progress on parts of it. It is estimated that the entire project will take 10 years to complete, will cost over $200,000,000, and will prevent an average annual loss of $24,500,000.

Wise Use of Underground Water. Closely related to the problems of surface water is the underground reserve from which is drawn the water supply of 90 per cent of our cities and much of the water used for industrial and agricultural purposes. These underground reservoirs exist in porous limestone rock formations into which surface water seeps. Municipal water supplies are generally drawn from wells penetrating these formations. Pumping millions of gallons from these wells lessens the pressure holding out the sea water and allows salt water to penetrate rocks at deeper levels and contaminate the water supply. Water fields so contaminated are permanently destroyed, and new water supplies must be sought

Figure 91A — Flooded street in a south Florida city

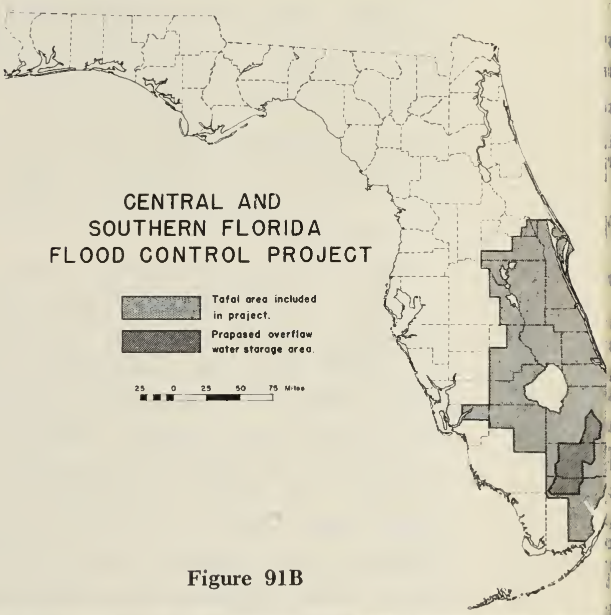

CENTRAL AND
SOUTHERN FLORIDA
FLOOD CONTROL PROJECT
Total area included in project.
Proposed overflow water storage area.
25 0 25 50 75 Miles

Figure 91B

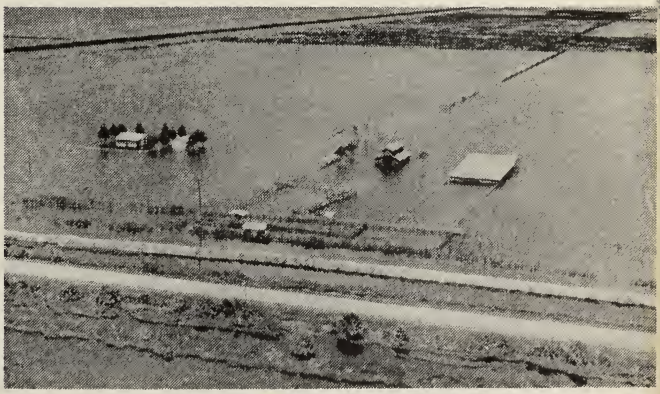


Figure 91C — Flooded ranch in south Florida

further inland. Even limited use of such water fields for farm or domestic use is impossible once salt has entered the field. Several Florida cities have had to move their wells because they were too near the ocean. Several other cities have learned from these mistakes and secured surface water supplies, or have drilled wells further inland, freer from the dangers of salt infiltration.

Over-drainage, by removing surface water before it has time to seep into these underground supplies, may lower the water table even more rapidly than pumping. Salt water, being 2½ times as heavy as fresh water, rises 40 feet for each foot the fresh water table is lowered. It is obvious, then, that overdrainage may threaten municipal and agricultural supplies, and that water conservation areas (such as the lakes and reservoirs in the Flood project already referred to) will help preserve the adequate supply of fresh water needed for the continued growth of the State.

Flowing wells and springs, which are numerous in central and northern Florida, are caused to flow by water pressure built up in the underground rock strata. The water comes from a very porous limestone rock which underlies all of Florida in a dome-like formation with its peak near Ocala. This layer of rock slopes north, south, east and west from Marion County, where it crops out of the ground. This highly porous stratum receives water through seepage, as do other water bearing strata, and discharges water through springs (such as Silver Springs) at other places where it is near the surface.

Wells drilled into this formation may produce very large quantities of water. Cities, like Jacksonville, for example, get all their water from this source.

Proper use of water from this formation presents problems. This is enormous loss of water through thousands of uncapped and uncased wells that are permitted to flow constantly, thus removing water faster than it is replaced by nature. In 1953 the Florida Legislature recognized this problem by passing a bill requiring land owners to equip flowing wells with shut-off valves by September 15, 1953. If owners did not comply, the Florida Geological Survey and the county sheriffs who are responsible for enforcing this law, have the right to install the valves and charge the cost to the owner.

Many non-flowing wells which penetrate this strata are uncased or improperly cased, allowing water from the deeper levels, often hard or saline, to penetrate shallower reservoirs, contaminating them and reducing the water pressure. Salt intrusion through reducing the water pressure may also result from these unwise practices. To illustrate how quickly man can disturb nature's balance through unwise use of resources, it is worth noting that in Nassau County flowing wells which originally flowed under a head of 55 feet must now be pumped from depths exceeding 100 feet.

Damaged Waters. Many American rivers, streams, bays, and underground waters have been polluted by dumping raw sewage and industrial wastes into them. Recognizing the health menace and the economic destruction involved in polluted waters, many northern cities are now trying to clean up the waters they have destroyed.

Florida too has its pollution problems.

*** EXPLORING FOR YOURSELF—Does your county face major problems of water supply? If so, what is being done about them? You may want to write to the Central and Southern Florida Flood Control Project for maps and other information concerning this work. If you live near enough, you may wish to visit some parts of this project.

As the population and industry of the State grow, the menace of contaminated water becomes greater. Most of our principal rivers that flow through cities have raw sewage dumped into them. Many are used to dispose of poisonous or odorous industrial wastes from papermills, chemical, and other industries. The St. Johns, Miami, New, Caloosahatchee, Manatee, and Halifax rivers, to mention a few, have been polluted. Nor have our bays and beaches escaped. Pensacola, Chocktawhatchee, Tampa, Sarasota, Biscayne, and other bays are contaminated.

Drainage wells which pumped untreated sewage into our underground water supply were formerly located near Orlando, Ocala, Live Oak, Apalachicola, Fort Lauderdale, and many other towns. Since there is much movement of our underground waters through crevices and caverns dissolved in the sponge-like porous limestone, such contamination may travel great distances. Much of the waste eventually enters drinking water supplies at great distances from the source of contamination. In Orange, Polk and other counties, industrial wastes have also been disposed of by pumping them into drainage wells. The hazard to health posed by these practices, now largely discontinued, becomes frightening when one realizes that less than one half of our citizens have a domestic water supply that has been treated to purify it. Health authorities are seriously concerned about our underground waters, and people who drill wells must now report to the State Health Department. Of course people who use wells should always have their water analyzed to be sure it is potable.

Polluted surface waters also become a health hazard. Thousands of acres of fresh and salt water are so polluted as to render them unfit for swimming, boating, fishing, or other recreational activities. Many of our food fish are becoming less numerous because of the toxic condition of the streams in which they breed. In addition, the water creatures which can withstand such pollution are frequently rendered unfit for human consumption. Two hundred thirty-two square miles of commercial shell fish growing beds were condemned by the State as a direct result of pollution.

You might be interested in learning what is being done in your county with poisonous industrial wastes, and with sewage. Generally, industrial wastes can be rendered harmless at slight additional cost. Many American cities have found that raw sewage can be dried, sterilized, deodorized and converted into a fine fertilizer which will sell for enough to cover the cost of sewage disposal, or even to return a profit. Such fertilizers return to the soil the unused minerals needed for plant, animal and human life.

CONCLUSION

Wise use of land in Florida has been slow in developing. Much of Florida was different from other areas with which farmers were familiar, and the mistakes which they made in using land elsewhere often were repeated when they came to Florida. Most of the fertile soil of North Florida was seriously damaged before man realized he could not grow cotton on it year after year without fertilizing the land and rotating cotton with soil-building crops. The forests were destroyed before man realized he would need them again. Parts of the Everglades were burned or depleted through too rapid drainage before man realized what was happening. Lands were eroded before man realized they were washing and blowing away.

*** EXPLORING FOR YOURSELF—Does your community have problems of water pollution? If so, what are these problems? Is anything being done to solve them?

Lack of knowledge and economic exploitation without regard for the result have been the chief reasons for this destruction of our resources.

Thousands of acres of Florida's land still lie idle, producing nothing useful to man. Absentee ownership of large tracts keeps much of it idle. Owners hold other land for speculation. Much land they do not know how to use profitably, and they are unwilling to put it into long term, low-profit crops, such as trees, which it will produce.

More widespread education is improving the treatment of Florida's land. The experience of enlightened farmers, agricultural science training in the colleges and 160 high schools, 4H Clubs, Agricultural Experiment Stations, County Agents, the work of the Soil Conservation Department of the United States Department of Agriculture, the Forest Service, and other agencies have helped greatly to improve our use of the land. Much education and experimentation are still needed, however, in all parts of Florida if we are to make maximum wise use of our resources.

Chapter 10

Florida's Tourist Industry

Have you ever stood beside a main Florida highway on a bright winter day and watched the traffic stream by? The number of cars and the variety of license plates make it seem that all America and some of the rest of the world are passing in review. You are seeing, of course, part of the annual parade of winter visitors to Florida. Refer to the map in Figures 96A and 96B to see where in the State these visitors go. Which counties seem to have the most tourists if you judge by available lodging places? Many of these people stay overnight or for a few days in one community, while others remain for several weeks or months. They use many means of transportation — planes, busses, trains, even yachts, but over half of them travel in their own cars.

From the traffic flow on the map in Figure 96C and the maps in Figures 96A and 96B showing rented rooms and dwellings rented seasonally, determine which counties have an important tourist industry. Figure 97A will help you discover, that while Florida has visitors all year around, there are two distinct tourist seasons. The summer tourist seems to be appearing along the upper Gulf coast and in the Daytona-Jacksonville area in greater numbers. Many of them, also, are taking advantage of reduced summer rates on the lower east coast (Figure 97A). These trends do not yet approach the winter-time peak of the State as a whole.

You may know of many smaller areas not shown on the maps, to which tourists are very important. You will need to remember too that some regions of Florida (perhaps your own) are growing very rapidly and may not present the same picture a few years from now.

As indicated by their car licenses and hotel registrations, tourists come from all parts of the Nation, and indeed from foreign lands. An analysis shows that many of our winter visitors come from northern states east of the Mississippi River (Figure 97B). Most summer vacationists who appear at northern Florida beach resorts come from the inland areas of neighboring states (Figure 97B). An increasing number of Latin American vacationists adds to the cosmopolitan appearance of

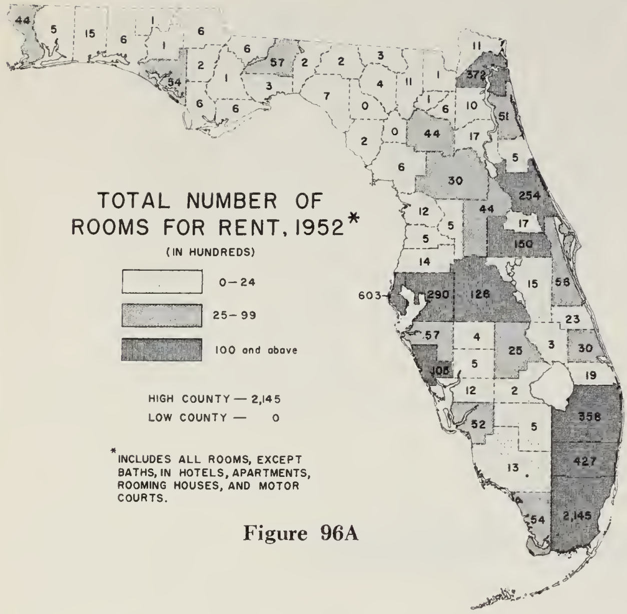


Figure 96A

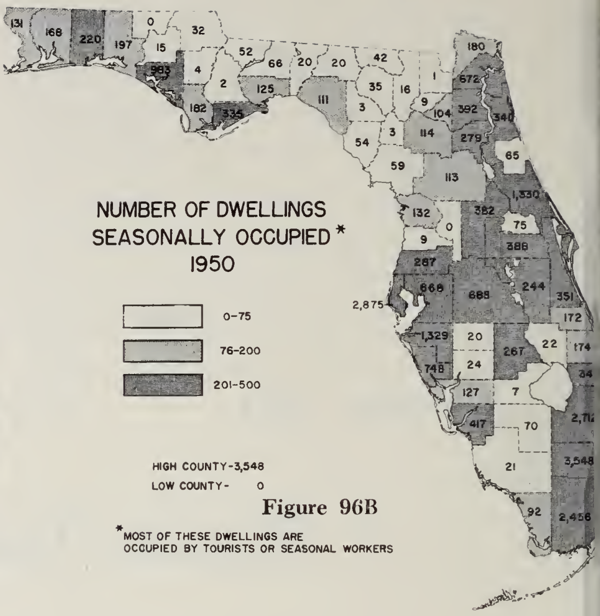


Figure 96B

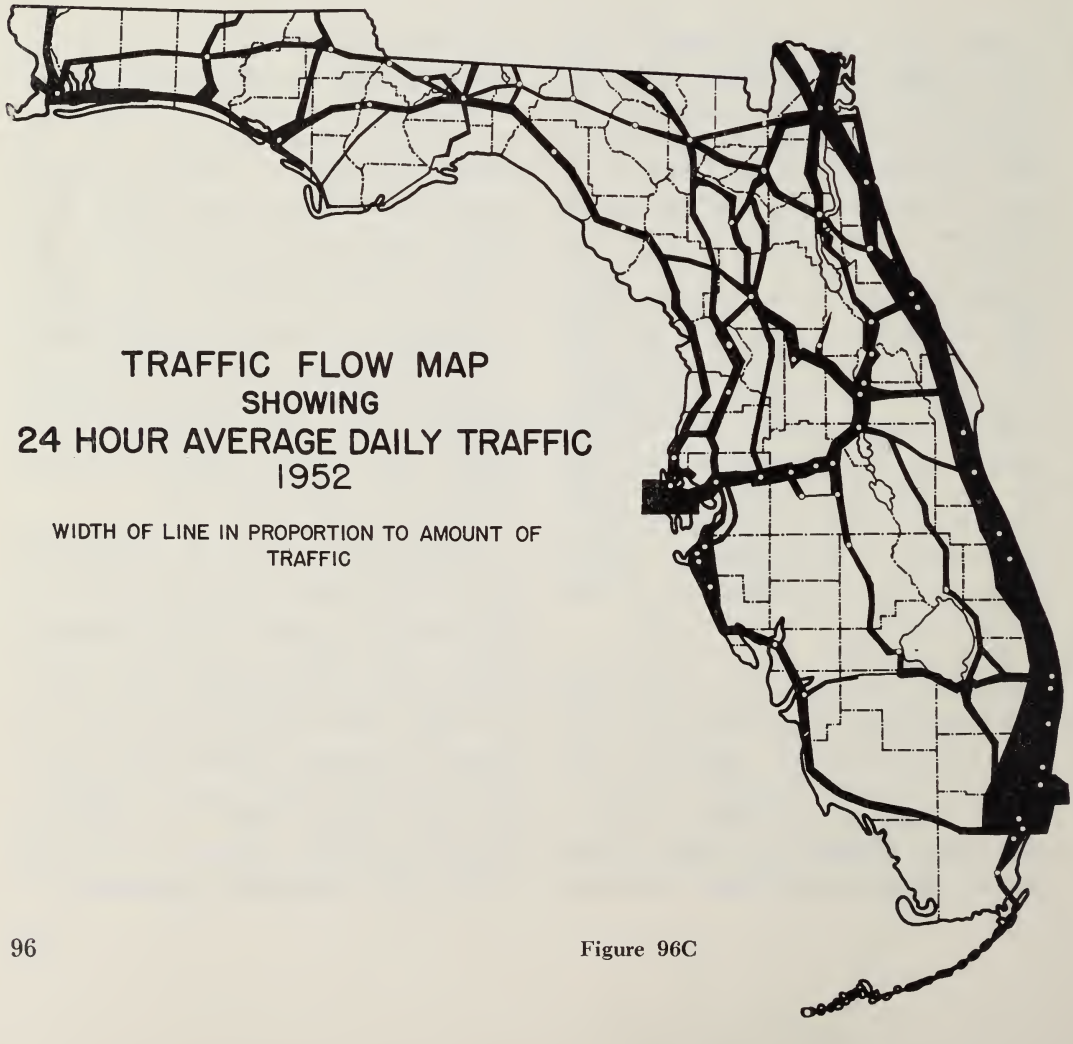

TRAFFIC FLOW MAP
SHOWING
24 HOUR AVERAGE DAILY TRAFFIC
1952
WIDTH OF LINE IN PROPORTION TO AMOUNT OF TRAFFIC

Figure 96C

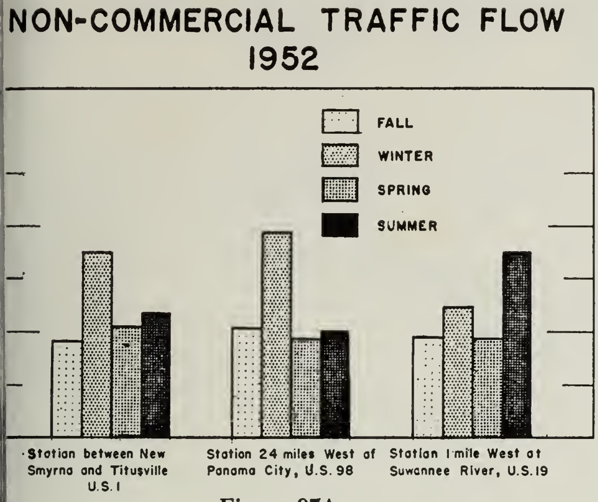


Figure 97A

the Florida scene, principally around Miami and Tampa. In general, however, the largest number of Florida's tourists comes from the southeastern states.

ORIGIN OF HOTEL GUESTS

	Per Cent
Southeastern States (not Florida).....	49.0
Middle Atlantic States (New York, New Jersey, Pennsylvania)........	19.0
East North Central (Ohio, Indiana, Illinois, Michigan, Wisconsin).....	15.5
New England......................	3.5
Southwest (Arkansas, Louisiana, Oklahoma, Texas)....................	3.5
West North Central................	2.5
Latin America.....................	3.5
Other Origins......................	0.5

Figure 97B

This vital industry, sometimes called tourism, is more than a southward movement of people which crowds our highways, trains, and busses. These moving wheels are bringing to the State its largest source of income. The annual tourist migration is an event on which many of Florida's people depend entirely or partly for their living. The increase in Florida's population, particularly in some counties, is a reflection of this growing interest in Florida both as a winter and now a summer resort region (Figure 98A and 98B). Many additional miles of improved highways and the increase in the number of workers engaged in the building trades can be observed in almost every section of the State. The numerous and attractive hotels, motor courts, apartments, and guest homes emphasize the reasons for the increase in the number of people employed in service occupations. They also indicate the importance of these visitors to the economy of Florida. Can you mention other ways in which the tourist industry is important to us? You may need to refer to other chapters in this book.

A VACATION LAND DEVELOPS

The early history of the State gave little indication of its future position as a national tourist center. Life in the northern and western parts continued on the usual frontier basis. You have already learned that the semi-tropical south remained undeveloped until the early 1900's, when transportation facilities were extended to that region. Since housing must of necessity accompany transportation, Florida's great railway builders, Flagler and Plant, located luxurious resort hotels along their lines. Flagler built units of the East Coast Hotel System at St. Augustine, Daytona Beach, Palm Beach, Miami, and Key West; Plant built hotels at Tampa and Clearwater. Towns near these centers and along the railways sprang up rapidly. The warm climate and the opportunities for recreation appealed to the well-to-do, and Florida vacations became popular, with private railway cars and yachts a familiar sight. The last link in the major transportation lines was made in the 1920's, mainly through the efforts of Barron Collier, who joined with Plant in extending railway lines along the southwest coast. The Tamiami Trail was constructed. A string of hotels was built, new

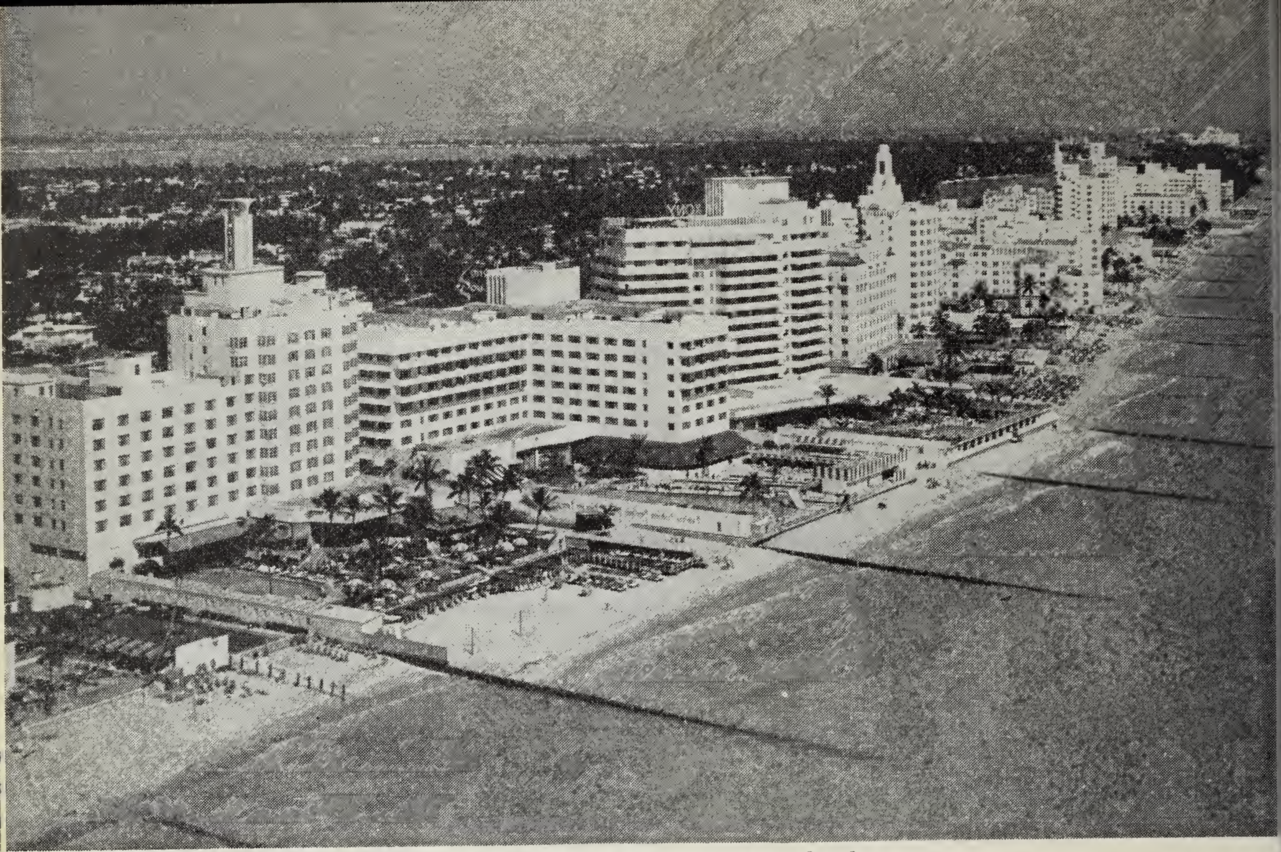


Figure 98A – Miami Beach and hotels

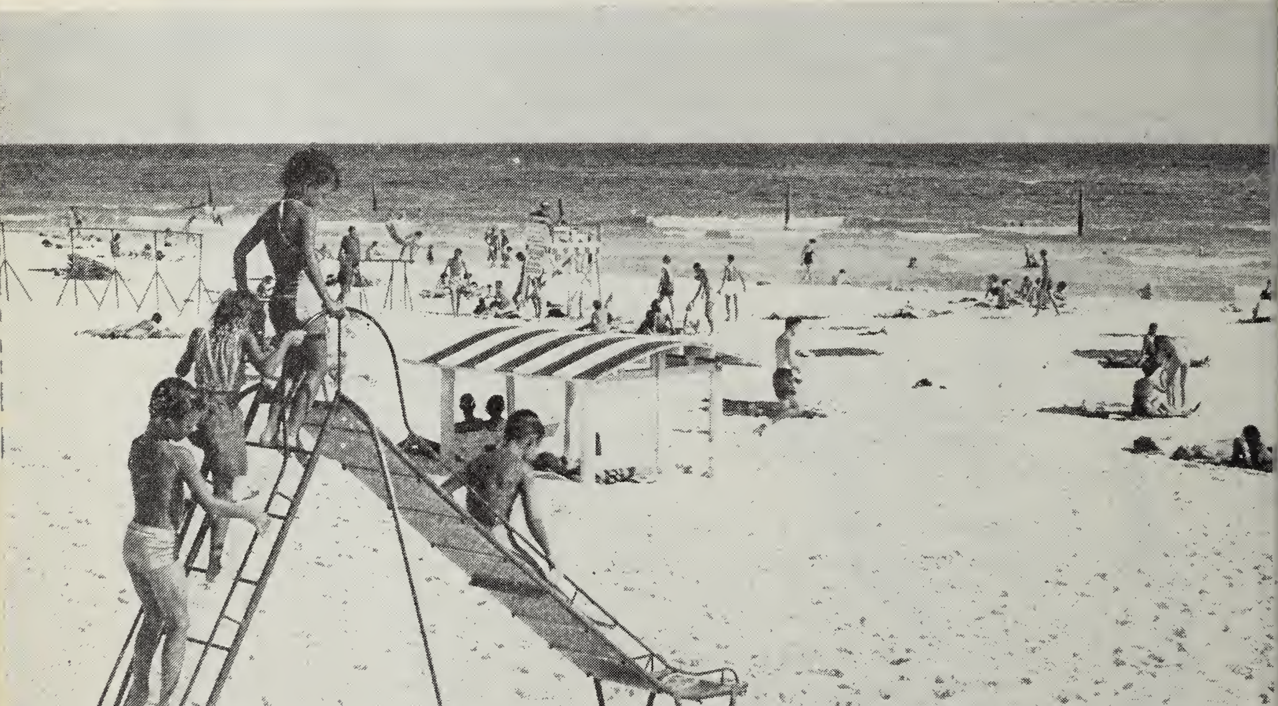


Figure 98B – Panama City beach

communities begun or old ones developed, and America "found" a new vacation land.

THE VALUE OF TOURISM

The number of winter visitors and seasonal residents has increased still more since World War II. Figure 134 shows the estimated value of the tourist trade.

FLORIDA TOURISTS AND TOURIST INCOME*

Year	*Number of Tourists*	*Income from Tourists*
1945	2,500,000	$350,000,000
1946	4,500,000	605,000,000
1947	4,500,000	790,000,000
1948	4,600,000	800,000,000
1949	4,700,000	825,000,000
1950	4,700,000	825,000,000
1951	4,800,000	840,000,000
1952	4,900,000	900,000,000
1953	5,100,000	930,000,000

* Estimated by the Florida State Chamber of Commerce.

Figure 99

You have learned that 66 per cent of all workers in Florida are engaged in service occupations (Figure 24 in Chapter 3), which are to a great extent dependent upon the tourist industry. In addition to thousands of local residents, a flood of out-of-state workers precedes the tourists to profit from their spending. Have you ever thought about how many people in how many occupations receive parts of a tourist dollar? Figure 100A shows the estimated porportions in which such a dollar is divided among items of everyday living.

For further indication of the value of the industry to the State, look at the maps in Figures 26 and 100B. Do the counties having tourist activities also have buying incomes above the state average? Are the retail sales higher or lower in these counties?

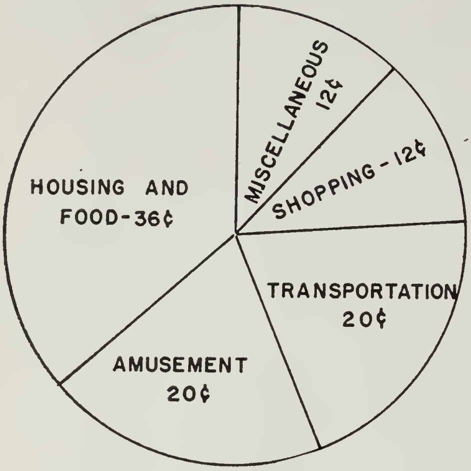
It is worth noting too that, although the industry is largely seasonal, it helps provide work during the entire year. As soon as one winter season ends, Florida begins preparing for the next. Homes and hotels, though closed and shuttered during the summer, need repairs and alterations. Roads must be maintained and advertising campaigns conducted to attract more tourists and to persuade them to stay longer.

Not only do tourists spend large sums in retail establishments, but many of them are winter residents who own property and pay taxes toward the support of city, county, and state governments. Florida automobile licenses are purchased by many visitors when they accept seasonal employment or when their children attend public schools. The gasoline tax paid by tourists helps maintain the highways on which they drive.

*** EXPLORING FOR YOURSELF—

1. Find out how much your own community depends on tourist income. Check such things as number of motels and seasonal variations in number of workers engaged in personal service activities. Refer also to the map in Figure 100B.
2. Do the people come to stay for the winter in the areas, or does it serve them as they travel through?
3. Find out if possible what these tourists are searching for in a vacation land. Also how many remain as a part of the resident population.
4. What types of tourists visit your community—business people on vacation, wealthy people, or retired people looking for new homes?

HOW THE TOURIST SPENDS HIS DOLLAR*



Average total spent per day – $12.60

* ESTIMATES PROVIDED BY FLORIDA STATE CHAMBER OF COMMERCE

Figure 100A

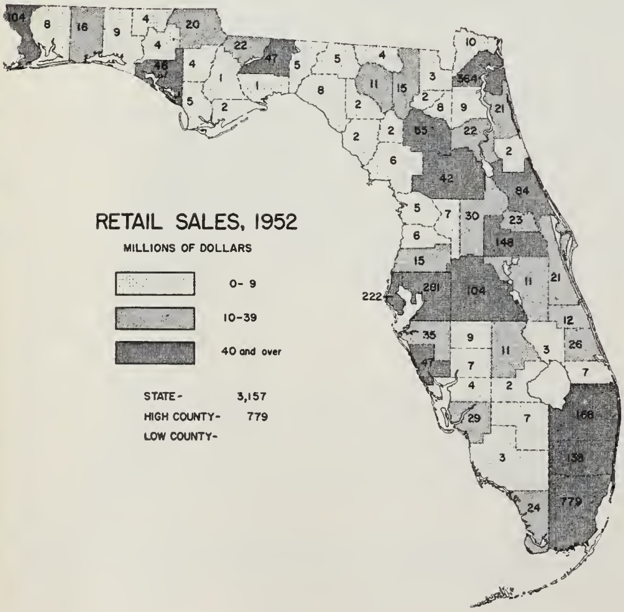


Figure 100B

WHO ARE FLORIDA'S TOURISTS?

Florida's visitors represent a true cross section of American life. They come from all classes of people and are more cosmopolitan than our resident population. Many of the families which represent America's greatest fortunes maintain winter homes in the State. Possibly the most typical tourists are business men and women and those who have retired from business. Their incomes are above the average, but few of them could be called extremely wealthy. Too, thousands of people with modest incomes visit Florida each year. The development of 10,000 miles of highway within the State and the placing of the automobile and trailer within the reach of more people have made Florida vacations possible for many within the lower income groups. Going to Florida is no longer an exclusive privilege of the wealthy. Many of the people may more accurately be called residents, since they stay three months or longer. There is, however, a less leisurely type of tourist. For instance, there are the young visitors who dash to Florida to play in the sun and the northern workers who arrange to take their short vacations during the winter. The followers of sports fly down from the North to watch their favorite horses run, to play a few rounds of golf, or to lure a game fish.

WHY FLORIDA ATTRACTS TOURISTS

Why do so many people come to Florida? Surveys taken of people entering the state by public carrier and by private car show that recreation and health are the principal reasons for their visit. About 85 per cent of those questioned were entering the State for reasons directly connected with Florida's greatest asset — its climate. How does the map in Figure 61B help to explain why so many people from the northern states visit Florida in the winter?

Selling Climate. The higher winter temperatures of Florida are due in part to Florida's location near the tropics. This results in a longer winter day with more hours of sunshine than in northern United States, and with greater intensity of heat resulting from more direct rays of the sun. Over most of the State there is also much less cloudiness in winter than in the northern states. Florida's peninsular character, the large areas of inland lakes and swamps, and the warm current of the Gulf Stream off-shore also help to maintain higher winter temperatures. Outdoor living in winter is made pleasant by the small number of rainy days during that season. The tourist industry depends not only on Florida climate, but also upon weather conditions in the North. A mild winter there means a shorter Florida tourist season with fewer visitors. A bad winter sends a flood of visitors. This combination of factors has made it possible for the State to "sell" climate by the week or by the month.

Florida has other natural attractions as well. You may be able to add to the following list of attractions which help to entice the tourist interested in such things as shell collecting, fine fishing, nature study, or just relaxation:

1. Longest coastline of any state — many miles of fine beaches.
2. Numerous inland lakes and streams.
3. Relatively narrow width — no part of the State more than two hours drive from the Gulf of Mexico or the Atlantic Ocean.
4. 23,000,000 acres of forest land with more than 300 species of native trees and many varieties of flowering plants — thousands of these acres have been included in state and national parks.
5. Swamp areas, which are the home of unusual plant and animal life.
6. Rich resources of fresh and salt water fish and many wild animals.

State and National Parks. Some of the natural attractions listed above have been protected and made readily available to visitors in Florida's 24 state parks. In addition, Florida has 18 interesting historic memorials (Figure 41). These parks and memorials are more fully discussed as recreational centers for Florida people in Chaper 14, "How Well Florida's People Live."

Florida has one rather new national park. The Everglades National Park (Figure 41) is unique because of its tropical character (Figure 11A). Both wildlife and vegetation are varied and unusual. Wooded places abound in such birds as American and snowy egrets, herons, ibis, water turkeys, roseate spoonbills, and limpkins. Alligators, redfish, snook, tarpon, garfish, black bass, and many other tropical fish (600 species in all) live in the waters of the Everglades. On the branches of cypress and pond apple trees are hundreds of air plants and ferns. Wild fig, wild lime, many unusual flowering vines and shrubs, and many varieties of hardwood, such as mahogany, gumbo limbo, and lignum vitae grow in the Park. Nature lovers, hunters, and fishermen from all over the United States and from other countries find here many things to interest them. The Everglades National Park is one of the few that can be visited at any time during the year.

What other kinds of entertainment does Florida offer its many types of visitors? Does the visitor crave thrills? Aquaplaning may please him. The excitement of catching a big tarpon in the Gulf or sailfish in the Gulf Stream, or the leap of a black bass in an inland lake, may appeal to him (Figure 102). He may like hunting for quail or duck or stalking deer. If the visitor wants glamour and crowds, the bright fairlyland of nighttime Miami

Beach or the excitement of a race track may suit his fancy. But what can Florida offer the tourist who wants something less pulse-quickening? A leisurely game of shuffleboard may interest him (Figure 103), or a day spent exploring the beach. He may enjoy taking a sight-seeing trip or just sitting on a dock in the sun quietly fishing.

While the importance of the tourist industry tends to increase as one goes southward in Florida, this by no means leaves the rest of the State out of the picture. As the tourist travels through northern and western Florida on his way to and from vacationland, he spends money for food, lodging and gasoline. Then, too, most of Florida's spots of historical interest are in the northern part of the State. Have you already learned anything that helps you to understand why this is true?

Perhaps for some visitors nothing would be more interesting than to observe one of the industries of the state. For example, a farmer would enjoy visiting the truck crop areas around Lake Okeechobee, or he might want to visit a citrus grove in the ridge section. Certainly anyone would be thrilled with the breathtaking beauty of delicate orchids, or the sight and fragrance of miles of blossoming orange trees. The picturesque costumes and customs of the Seminoles may be seen by stopping at an Indian village along the Tamiami Trail. St. Augustine's old buildings, relics of a life long past, have a charm found few other places in Florida. Whether the visitor enters Florida through Pensacola, Tallahassee, Lake City, Jacksonville, or Miami, he will find much to tempt him to tarry along the way.

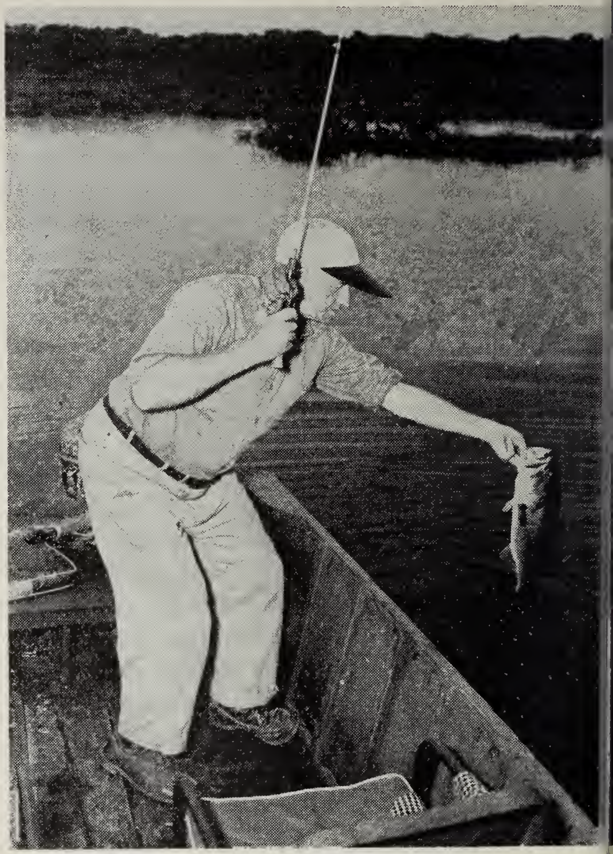


Figure 102 — Bass fishing

RESOURCE USE PROBLEMS

How to Protect the Tourist Industry. It is probably clear to you now that Florida uses its natural resources as a base on which to build its tourist trade. Obviously, then, if any of these natural resources is misused or totally destroyed, fewer tourists are likely to visit the State.

*** EXPLORING FOR YOURSELF—

1. Secure a Florida road map from your local service station or use an outline map to show the most important tourist centers.
2. Invite new students in your group to chart on your Florida map the roads or areas over which they traveled. Get them to tell you what they saw.
3. Chart other routes they might have taken to see more of Florida's attractions and industries.
4. Invite them to share with you interesting places in other states they have visited.

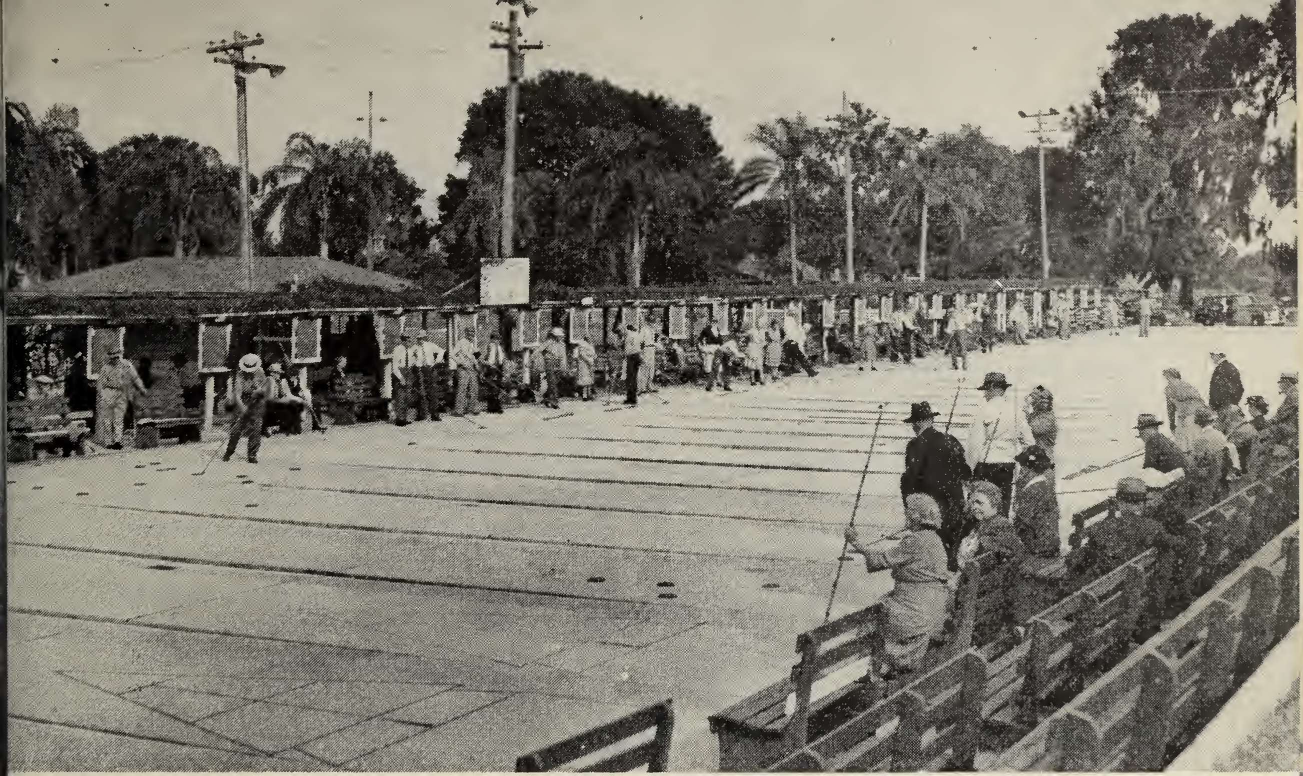


Figure 103 — Shuffleboard

For example, numerous forest fires, which destroy scenic beauty and native bird and animal life and fill the landscape with smoke, prevent tourists from enjoying camping, hunting, and even motoring through the State.

Wise Use of Wildlife. As the tourists and local residents interested in hunting and fishing become more numerous, the drain on fish and game is greater and the need for conservation more acute. Therefore, not only the sportsman and nature lover, but every Floridian interested in the development of his State, needs to be immediately concerned about this problem.

In Florida, as elsewhere, the march of civilization has tended to upset Nature's balance. The drainage of large areas of the Everglades to develop new farming land is an excellent illustration of this tendency. Here vast fires have burned for years, destroying not only vegetation, but the very soil itself. Wildlife leaves these dried and blackened areas and retreats farther into the interior. That unwise use of artesian wells threatens the water level of Florida is indicated by the drying up of certain lakes and swamps over the State. A lowered water level threatens fish, bird, and animal life and the food which supplies them. Unrestricted lumbering destroys the natural homes of wild creatures and forces them to retreat into the few areas not destroyed by man's greed. Factories or mills may pollute streams and ruin them for the angler. Ask some old settler in your neighborhood about the fish and game that used to abound there. Your own parents can probably remember when wildlife was much more abundant than now.

But man has also brought about destruction of Florida's wildlife in much more direct ways. The game "hog" and greedy fisherman have made vast inroads into Florida's formerly abundant wild life. The beautiful egret was almost wiped out by hunters who killed the female white heron with young in its nest to secure plumes for women's hats. Not too many years ago passengers on river steamers going up the St. Johns slaughtered "just for sport" vast numbers of alligators sunning on the banks, just as earlier Americans shot buffalo from train windows and left their bodies to rot on the western plains. Illegal seining of black bass and other fresh water fish has greatly reduced their numbers. It is often thought that salt water fish are inexhaustible, but certain species have decreased noticeably in recent years. Unrestricted seining has destroyed countless millions of undersized salt water food and game fish, besides ruining spawning and feeding grounds. The "poacher" and the out-of-season hunter have deprived many a legitimate sportsman of a good day afield and brought nearer the day when Florida's fresh and salt water may provide neither sport nor livelihood.

The future of Florida's wildlife is not hopeless, by any means. The out-of-doors Floridian who really loves his rod and gun is interested in sport for himself and his children. He realizes, furthermore, the economic importance of wildlife to the State. This increased awareness during the past decade has helped create favorable conditions for nature to replenish game at an accelerated rate.

Space does not permit full discussion of the many valuable contributions made by the agencies concerned with wildlife conservation. Such agencies as the Florida Wild Life Federation, the Florida Game and Fresh Water Fish Commission, the United States Fish and Wildlife Service, as well as State and National Forest Services, have developed important conservation projects. Such organizations as the Audubon Society and garden clubs have initiated educational programs designed to make both visitor and natives aware of Florida's wildlife resources.

Much money, time, and effort have been put into the conservation of Florida's wildlife. However, all of this is to no avail unless Florida's people themselves become vitally concerned. Violation of the fish and game laws is widespread. Much has already been done and yet needs to be done to arouse Florida's people to the need for wise use of wildlife resources. Wildlife contests have been approved by county school systems, 4-H wildlife camps have been held, moving pictures and fair exhibits have been presented to the public. Wildlife Weeks have been sponsored and much publicity has been given by the Commission of Game and Fresh Water Fish and other agencies. But the future of Florida's wildlife is in the hands of the citizens alone.

Some Other Problems. To continue to enjoy its position in the tourist industry, Florida cannot merely exploit its natural advantages and expect to derive benefits from its visitors. Efforts must be made to meet new requirements and to solve the problems that have arisen. For instance, the extensive and costly system of highways already built must be improved and maintained to meet the demand for motor travel to tourist centers and points of interest widely distributed over a large state. An increasing number of tourists probably will travel by air; hence Florida is interested in the development of air transportation and is planning to provide adequate new facilities throughout the State.

In all seasonal tourist areas, the people who own and operate the businesses connected with the industry are faced with the problem of maintaining prices that are not unreasonably high and at the

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*** EXPLORING FOR YOURSELF—Members of your class will obtain both valuable and interesting information by interviewing the leaders of wild life conservation groups in your own community. They probably will share pictures, charts, and movies with you as well as information regarding local conservation practices.

same time of making a fair profit on their investments during the few months when tourists come. The temptation to overcharge is great. Those operators who indulge in this practice endanger the future of the industry and add to the difficulties faced by the operators of all business establishments.

The schools in resort areas and in farming areas with migratory labor face a particular problem in the great increase of enrollment during the winter months. Relatively small classes expand and create crowded situations within a period of a few weeks. At times additional teachers and classrooms are needed, only to become unnecessary as tourists and migrant workers tend to move northward in the spring.

There is every indication that Florida's tourist industry will continue as a major industry. Therefore, it is to the interest of the citizens of the State to become acquainted with the recreational needs and desires of the tourists and to provide adequate facilities for these pleasure and health-seeking visitors of all financial levels.

For example, more attention could be given to using those lands which are shown as suitable for recreation only, on the map in Figure 31. At the present time many of these acres are not adding to Florida's income. With a little thought and planning they could contribute additional recreational opportunities for "home folks" as well as visitors. State and national parks have been planned to provide similar facilities, but with a little effort many more could be made available for more people.

SOME ANSWERS TO POPULATION QUESTIONS

In Chapter 2 several questions on population were raised and left to be answered later. How does your study of the tourist industry help you to answer these questions:

(1) Why has Florida's population grown so rapidly over the last 100 years?

(2) Why is it still growing?

(3) Why has the population of some parts of the State grown more rapidly than others?

(4) Why do some parts of Florida have a cosmopolitan population and others not?

(5) Why does Florida have a higher percentage of old people and a smaller percentage of children than the southeastern states? A higher percentage of people from 21-45 years of age?

*** EXPLORING FOR YOURSELF—

1. Look again at your road map and find the table showing distance between urban centers. How long is the road extending east-west from Jacksonville to Pensacola; north-south from Jacksonville to Miami; and Jacksonville to Key West?
2. Do you see now the problem Florida faces in the construction and maintenance of such a highway system?

Chapter II

Using Florida's Minerals

If you listed the things made from minerals that you see or use daily, you probably would include such things as automobiles, trains, refrigerators, heating equipment, lawn mowers, and other tools. However, unless you name such items as brick buildings, hard-surfaced roads, concrete sidewalks, pottery, or fertilizers for farm crops, your list would probably not include anything made from Florida minerals.

A list of Florida mineral products contains no common metallic elements such as iron, copper, lead, silver, or gold, but is made up of sand, clay, limestone, phosphate, petroleum, heavy mineral sands*, and water. Many of these are relatively low in value and hence they do not give Florida a high rank among mining states (Figure 106). Nevertheless, they constitute a valuable resource for its people. Some of the names in the table in Figure 107 are probably new to you. There is not space here to explain the minor ones, but your teacher will help you to secure additional information about them.

PRODUCTION OF MINERALS, 1950

	Rank in United States	*Millions of Dollars*
United States		11,885
Leading States		
Texas	1	2,674
Pennsylvania	2	1,186
California	3	1,056
West Virginia	4	830
Southeast		
Alabama	18	159
Mississippi	25	103
Tennessee	26	90
Florida	28	68
Georgia	32	44
North Carolina	36	26
South Carolina	42	11

Figure 106

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*These heavy mineral sands contain grains of titanium concentrates (ilmenite, rutile), zircon, monazite, garnet, and staurolite, in addition to quartz.

FLORIDA MINERALS AND THEIR USES

Mineral	*Chief Uses*
Phosphate	Fertilizer, war chemicals, baking powder, photography. By-products: uranium, fluorine, potassium.
Limestone	Road construction, building stone, railroad ballast, fertilizer filler, agricultural lime, cement.
Sand and Gravel; Shell	Road construction and building purposes (in mortar and cement), as grinding and polishing sands.
Common Clays	Building brick and tile, in manufacturing of cement.
Staurolite	Cement making.
Monazite	"Flints" used in cigarette lighters or miner's lamps, alloy metal, fissionable materials.
Kaolin or White Clay	Standard ingredient in practically all white ware and porcelain.
Fuller's Earth (clay)	Filtering mineral oils, carrier for insecticides and fungicides, absorbent of oily substances.
Peat	Fertilizer and fertilizer filler, soil application.
Titanium Concentrates (ilmenite, rutile)	Paint pigments (production titanium metals), coating in electric welding rods, alloy, in carbides, and in ceramics.
Zircon	Ceramics (enamels, glazes), as refractories, oxides and chemicals, zirconium metal and alloy.
Ground Water	Domestic, agricultural, industrial

Figure 107

The table in Figure 106 shows how Florida compares in value of mineral production with the leading four producers of the Nation and with several of the southern states. This information, plus that shown in Figures 23A and 23C in Chapter 3, suggests that in Florida mining is not one of the major ways of earning a living. In fact, Florida ranks 28th among the states in value of mineral production. Notice in Figure 106, however, that the value of production in Florida exceeds that in three other southern states.

PHOSPHATE

Mining "Fertilizer". You probably know already which mineral product contributes more than half of the value of Florida's total output. Check with Figure 108A to see whether you are right. The chief use of phosphate is for the making of fertilizers. In 1950 Florida produced 80 per cent of the Nation's total tonnage of phosphate. Figure 108B shows one reason why Florida ranks high. Do you not wonder, however, when you look at Figure 108B, why Florida produces so much more

VALUE OF FLORIDA MINERAL PRODUCTS

Mineral	*Thousands of Dollars*	
	1951	*1940*
Total (estimated)	77,660	14,854
Phosphate	50,263	7,747
Limestone and dolomite	9,420	5,515
Sand and gravel	3,525	744
Clays	2,359	1,666
Petroleum	1,490	0
Peat	161	99
Miscellaneous	12,000	3,190

Figure 108A

phosphate than western states which have large reserves? Several reasons may be given for the greater production found in Florida. By consulting a map of the United States you will find that Florida is located nearer the farming areas of eastern United States where most of the phosphate is used. You can see, also, by this map and the one in Figure 109A, that Florida is in a better location to ship to foreign countries. Polk County and Hillsborough County mine most of the phosphate in the State. Figure 109A shows the chief known deposits and helps to explain why Tampa and Charlotte Harbor are the chief centers for exporting phosphate abroad. However, only about one-eighth of Florida's production is shipped overseas. The larger amount by far is shipped by rail either as raw phosphate or manufactured fertilizers to markets within our own country. Some also enters into coastwise shipping. In fact, 4 out of evergy 5 tons shipped from Charlotte Harbor in a recent year went by water to other American ports for distribution.

ESTIMATED DEPOSITS OF PHOSPHATE ROCK, 1953

Area	*Millions of Long Tons*
United States	59,000
Florida	25,000
Western Field (total)	20,000
Idaho	6,000
Utah	2,000
Montana	400
Wyoming	116
Tennessee	6,000
Arkansas	20
South Carolina	20

Figure 108B

More Important Reasons for Florida's being the leading producer of this important mineral are found in the size and richness of the phosphate rock deposits and the fact that they lie so near the surface that inexpensive mining methods are possible. Florida's phosphate may be described as high grade deposits forming a blanket, a few feet to as much as 50 feet thick, over large areas near the surface. It is found as "pebble" or rock fragments in a matrix of sand and clay. The open-pit mining method used in Florida is easier as well as less dangerous than mining deep in the earth.

Mining Procedures. Before the rich layer of phosphate can be mined, the covering of topsoil and sand and clay materials, called overburden, must be removed. The dragline (Figure 110A) is used for the purpose. Hydraulic pressure (Figure 110B) is used to mix the mined rock with water and to transport it through large pipes to the processing plants (Figure 111A). The large quantities of water used for this purpose are secured from deep wells. So this industry, too, is concerned with Florida's water problems. After being mined, the rock is prepared for use by processes of breaking, washing, screening, and drying. Figure 111A shows a large plant near Mulberry used for this work. Figure 111B should make you want to ask a question concerning quantity and value of phosphate production. Find in the graph the lowest and highest points

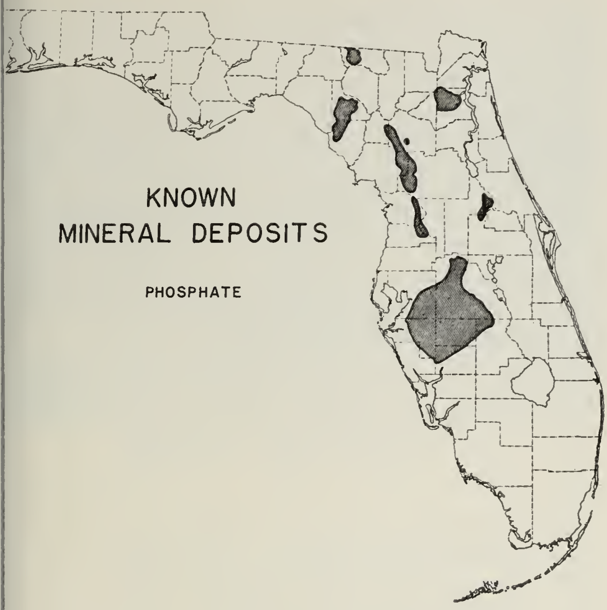


Figure 109A

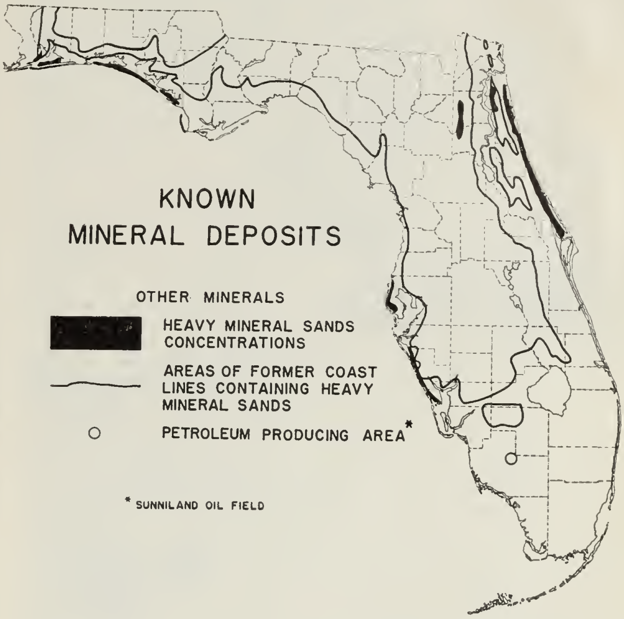

KNOWN
MINERAL DEPOSITS
OTHER MINERALS
HEAVY MINERAL SANDS CONCENTRATIONS
AREAS OF FORMER COAST LINES CONTAINING HEAVY MINERAL SANDS
PETROLEUM PRODUCING AREA*
* SUNNILAND OIL FIELD

Figure 109B

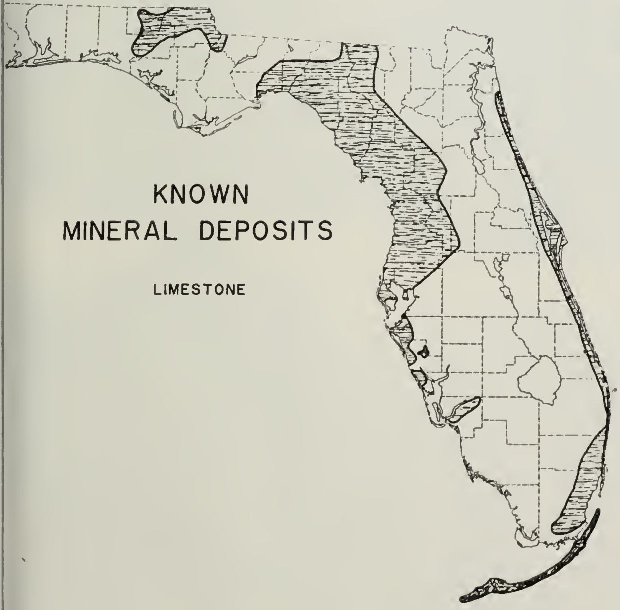


Figure 109C

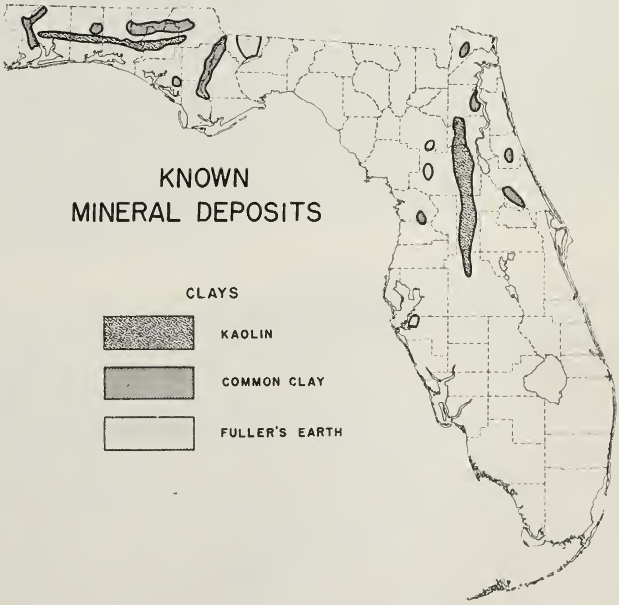


Figure 109D

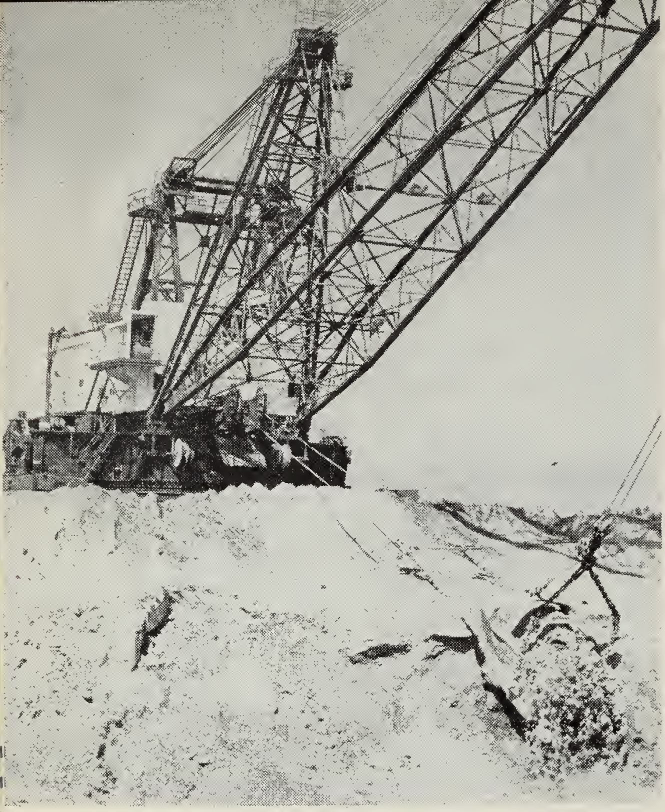


Figure 110A — Dragline

reached by value of phosphate after 1890. These ups and downs in value of production are caused by unusual demands during and after wars and by periods of prosperity and of depression. The uses of phosphates listed in Figure 107 should help you to understand these ups and downs. Notice that tonnage produced varies less than value, which means that prices per ton are much higher in periods of great demand than they are when the demand is less. This graph should make clear to you that Florida gains or loses by any event that affects the sale of phosphate in the United States or foreign countries.

You learned from Chapter 1 that minerals are non-renewable resources that are formed very much more slowly than they are used by man. Although the

Figure 110B — Hydraulic pressure in phosphate mining

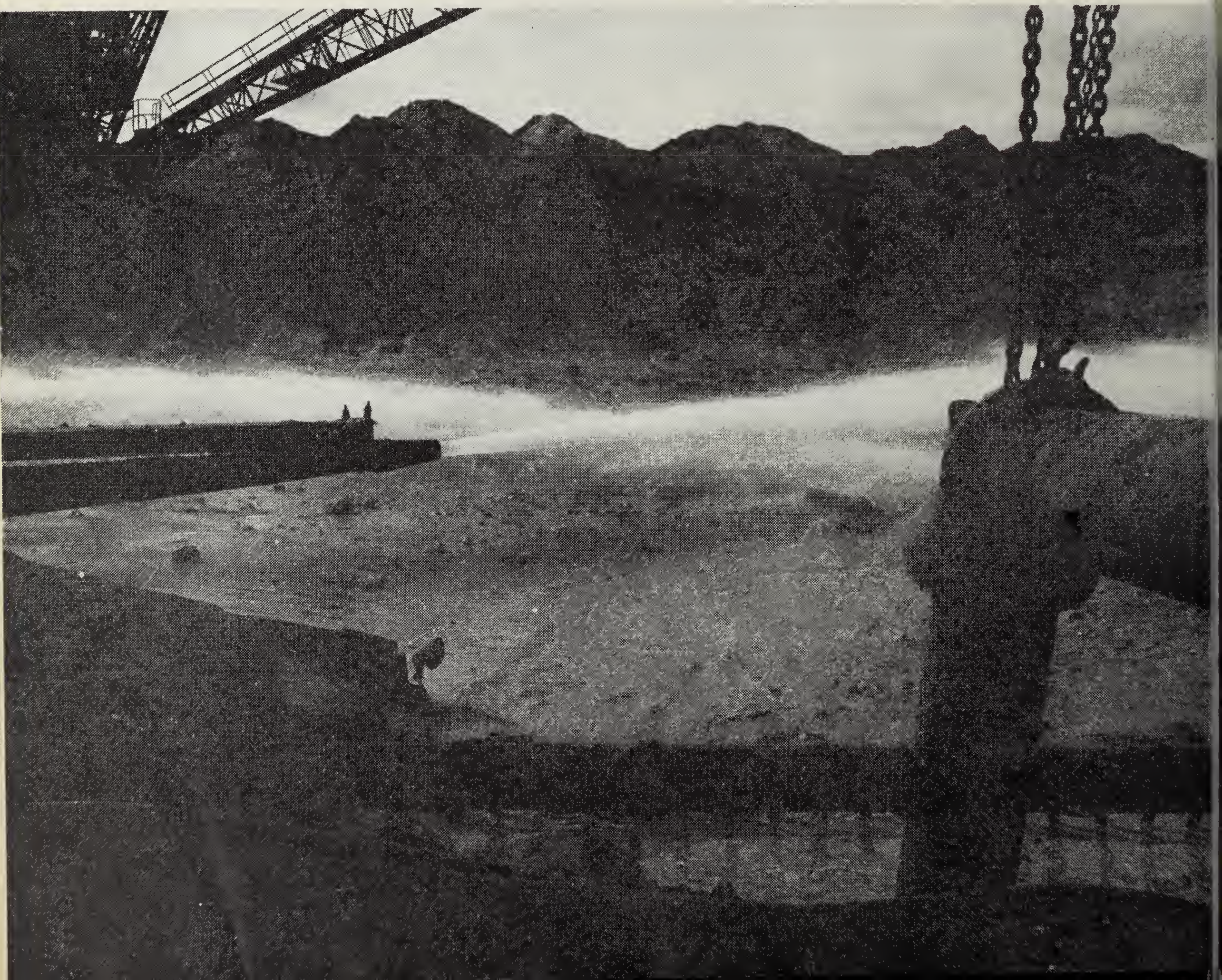


Figure 111A — Phosphate plant

United States has great quantities of phosphate, every ton that is mined and marketed is one ton less for future use. Florida can maintain a leading position in phosphate mining and depend upon it to support part of her population only if the best and least wasteful methods are employed. At present about 90 per cent of the phosphate is recovered from the rock, about twice as much as early in the history of the industry. Still better methods of mining are being sought, especially for the utilization of the small particles of land-pebble phosphate. It is estimated that at the present rate of mining, Florida's reserves will last several hundred years. But that is a very short time compared to the thousands of years that man has already been on the earth and the many thousands more that he expects to live.

New Developments. The building of several new plants in the phosphate district indicates not only the adoption of improved refining practices but also new developments in the national program of the Atomic Energy Commission. Records indicate that uranium has been known as a very minor component (about 3 to 6 ounces per ton) of the extensive Florida phosphate deposits since 1924. The United States Geological Survey, in cooperation with the Atomic Energy Com-

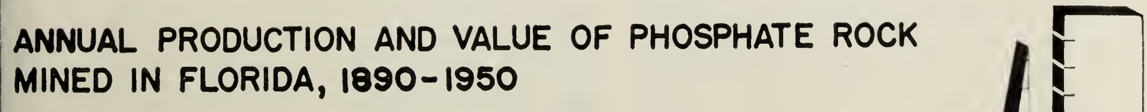


Figure 111B

mission, has been making detailed investigations of the phosphate deposits since 1947. Progress in these studies has resulted in governmental approval to several mining companies to build plants in Florida for the recovery of uranium as a by-product in the manufacturing of phosphate chemicals and concentrated commercial fertilizers. Since the factual details about the uranium content of the land-pebble phosphate and the methods of recovery are secret information, an accurate statement concerning possible production cannot be made. However, it seems clear that Florida's uranium contribution to the atomic energy program will be substantial.

Other by-products are also being recovered in the process of mining phosphate. Fluorine, obtained as a by-product in the recovery of uranium, will pave the way for important new sources of hydrofluoric acid and synthetic cryolite. A plant to produce synthetic cryolite out of the fluorine is now under constuction.

Some Problems. Phosphorus is necessary for building and maintaining good bone structure. The only source of this essential element is the earth, through which phosphorus is supplied to the plants eaten by man and by domesticated animals. When soils are low in phosphorus, the people and animals who live on the land suffer from the lack of it. Other necessary plant food elements can be provided from several sources, but at the present time man obtains phosphorus only from refining the rock. Thus phosphate rock deposits are one of man's most valuable possessions and should be wisely and carefully utilized by sound conservation practices.

A special kind of problem arises as a result of the methods used in mining phosphate. The top soil is removed and piled in great mounds and the landscape is pitted with holes partially filled in with mining waste. Thus the land is rendered useless unless some practical way can be found of leveling it. At present there are thousands of acres of such lands in the State and more acres are being continually added to this total. Some coal mining areas in Ohio and Indiana are transforming "waste lands" into recreation areas. Lakes for fishing and refuges for wildlife as well as grasslands and forests are being developed. A little experimentation along this line has been done in Florida, but much remains to be accomplished.

SEVERAL METALLIC MINERALS

Some Florida sands, especially beach sands, yield the only metals in the state. Production of zircon, rutile, ilmenite, and monazite is possible in the sand areas shown on the map in Figure 109B. Recovery of these minerals south of Jacksonville, in the Melbourne-Eau Gallie district, and near Starke, has resulted in Florida's now being the leading producer of these strategic minerals. Their varied uses may be determined from the table in Figure 107. The group of heavy elements found in the mineral monazite has been subjected to intensive study by the Atomic Energy Commission.

PETROLEUM

It is still impossible to say that there is or will be a petroleum industry of importance in Florida. A number of wells have been drilled in the search for petroleum, and 13 of these completed as oil producers. Thus far the drilling for petroleum in the State can best be described as exploratory. Oil company workers are still searching for and testing methods of production that may be useful in Florida. The size of Florida's potential oil resources is a question for the future.

You might be interested to know that whether or not oil is discovered in large amounts, much useful knowledge about the rocks underlying Florida has been gained by this exploratory drilling. The Florida Geological Survey has given aid in many studies which were helpful to the petroleum geologists and maintains a library of rock samples and cores taken from many water and petroleum wells throughout the State. Has there been any drilling for oil in your county? Watch the newspapers for new developments in this kind of mining.

LESS VALUABLE MINERALS

Limestone. Figure 109C should help you to understand why the value of limestone ranks next to that of phosphate (Figure 108A). Undoubtedly you have driven on some of Florida's many roads, some of which are made of shell or limerock and most of which have these materials as a base. Figure 113 shows a small crushing plant preparing limerock for road building. The various kinds of limestone deposits, like phosphate, lie near the surface and are relatively easy to mine. The center of limestone quarrying and the production of lime has shifted in recent years from Marion County to Dade and Hernando counties. New developments include the recovery of large tonnages of lime from the Miami water softening plant. However, Florida plants have never supplied the State's demand. Check Figure 107 again to determine the uses of limestone; highway construction and concrete products consume by far the greater proportion of limestone produced in Florida.

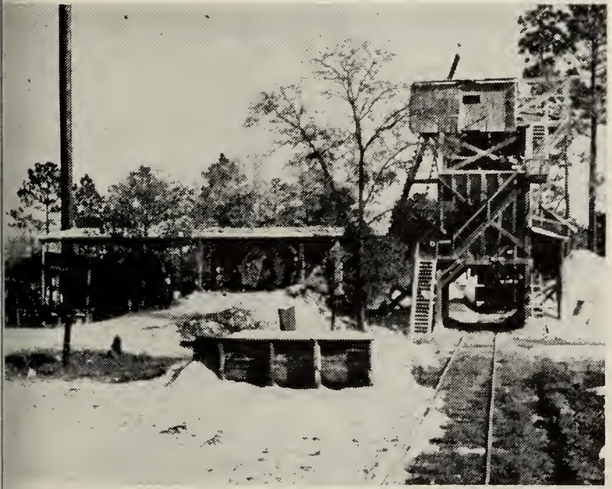


Figure 113 — Limerock crushing plant

Clays. Use Figures 109D and 107 to determine the location of reserves and uses of common clays, kaolin, and fuller's earth. In 1951, 203,000 tons of special clay were mined at a value of $2,359,000. Kaolin is shipped to pottery centers in the North for use in nearly every type of white ware and porcelain and to one factory in Lakeland for tile. Fuller's earth, another special purpose clay, is mined in Gadsden County. Since 1936, production data of Georgia and Florida have been combined, and in 1952 the Georgia-Florida district produced 64 per cent of the national tonnage and 70 per cent of the value of Fuller's earth mined in the United States. Common clays are used in the manufacture of construction materials. There has been a decline in the Florida brick and tile industry, but changing conditions appear to favor its reestablishment.

Cement. Portland cement has been produced in Florida for 25 years by a Tampa plant which has obtained its limestone from north Brooksville and its clay in Citrus County. Another plant at Flagler Beach began operation in late 1952, using coquina shell quarried near the plant and staurolite obtained from a heavy minerals separation plant near Starke, in place of the clay formerly used.

Sand and Gravel. Sand is almost universally present in Florida. Deposits of gravel are very scarce in the State and occur principally in the western streams and rivers. Find the value of production by referring to Figure 108A. Gravel production comes principally from Gadsden and Escambia counties, while the largest production of sand is reported by Dade, Escambia, Lake, Pinellas, Polk, and Putnam counties. Most of this production is utilized in the building and paving industries, but minor quantities are used as grinding and polishing sands and engine sands, as well as being used in the manufacture of glass.

Peat. In 1950 Florida produced 17 per cent of the total peat production in the United States. All of this product, valued at $151,270, was used for soil improvement, principally in horticulture.

A UNIQUE AND MOST VALUABLE MINERAL RESOURCE

Water is our most common, most vital, and most valuable mineral resource. We usually take it for granted and think of it as inexhaustible. Reading the section of Chapter 9, "Surface and Underground Water Problems," will help you understand why these statements are true.

Ground water is the principal source of supply for industrial, municipal, agricultural, and domestic uses in Florida. The daily consumption of ground water by these four major uses is estimated by the United States Geological Survey to average about 500 hundred million gallons. In certain areas of Florida some critical problems have arisen which have acted as danger signals and focused attention on the need for greater care in developing and utilizing supplies. For the State as a whole, the daily draft of 500 million gallons from ground water resources need not alarm us. Much of the many hundreds of millions of gallons of water discharged naturally each day from underground reservoirs can be put to use whenever it is needed. However, problems develop most acutely in urban areas with many people and heavy demands for water for municipal and industrial uses.

Certain mineralized water is assumed to have medical value when taken internally or used for bathing combined with massage. A few hotels or sanitariums have been built near flowing wells or springs of such water. Bottled water is sold for curative purposes, as a base for soft drinks, and for carbonated water. Distilled water is marketed for pure drinking water and for chemical uses. It is conceivable that the availability of the large water resources of Florida, in contrast with the shortages of supply in many other parts of the Nation, may play a dominant role in the agricultural and industrial growth of the State. Though plentiful reserves of ground water exist in the State as a whole, the increasing need for wise development of future supplies should not be minimized.

WHERE ARE WE?

1. The development of the mineral industry in Florida, its continued growth and diversification, are dependent upon the utilization of materials ordinarily classified as non-metallic minerals.

2. The foremost mineral products of the State are phosphate, limestone, sand and gravel, fuller's earth, kaolin, cement, heavy minerals, petroleum, peat and water.

3. There has been a tremendous increase in production of minerals and rock materials, and the value at the mines and quarries for these products increased approximately 450 per cent from 1940 to 1950.

4. The development of new scientific processes, the finding of new or additional uses, the accelerated tempo of world affairs, and the discovery of new sources will probably cause a continued increase in the production and total value of mineral products.

5. Even though there has been a great deal of development, Florida ranks 28th in mineral production in the United States, and only 1 per cent of her workers are employed in mining operations.

6. Ask your librarian or principal to secure for you additional and more recent information on Florida minerals from the Florida Geological Survey in Tallahassee.

*** EXPLORING FOR YOURSELF—

1. Find out if mining is an industry of your community. If so, find what materials are mined, the methods used, persons employed, and money value to the people. Is it used in the region, shipped out in a raw state, or manufactured?
2. Look again at the map in Figure 143. See if your community has known possibilities for mining that have not been developed.
3. Make a list of the major manufactured goods you use that are made from minerals. How many of these used basic materials mined in Florida?
4. Check with some of the construction engineers near you. Ask how many of their materials come from local areas. How many from Florida?

Chapter 12

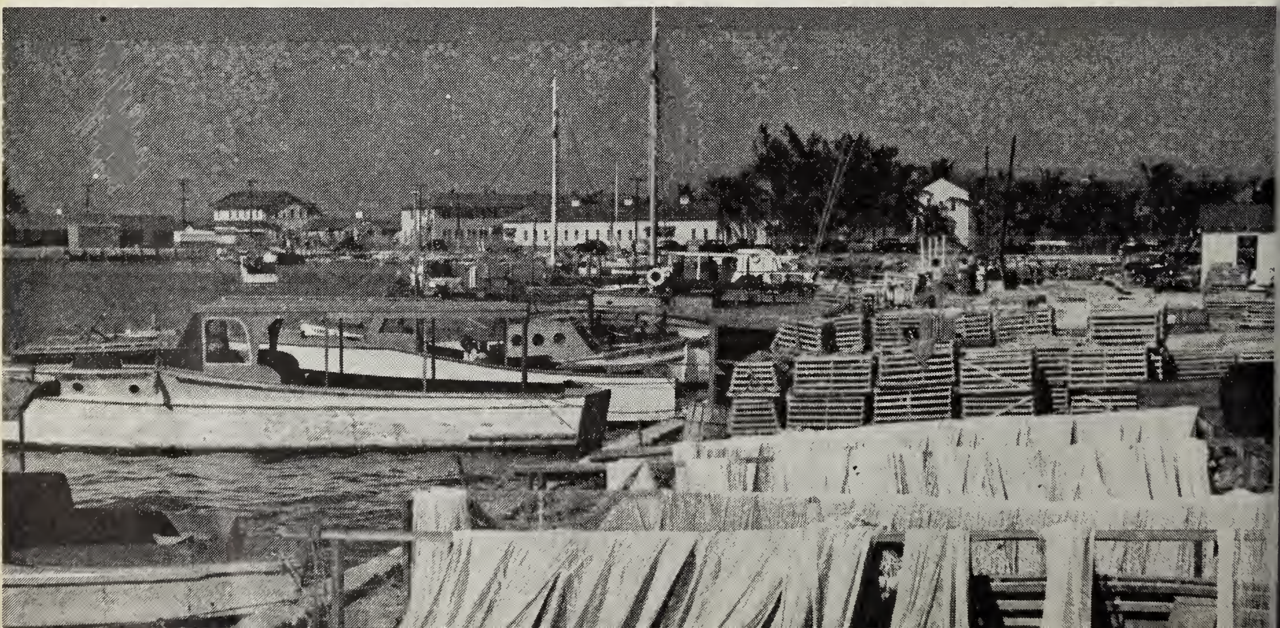
Using Florida's Sea Resources

Have you seen the fishing boats of Pensacola docking with refrigerated cargoes of red snapper, the sponge market at Tarpon Springs, or the shrimp boats at Tampa (Figure 116)? These are a few of the fishing industries by which approximately one-half of 1 per cent of Florida's workers earn a living. This chapter deals primarily with the fishermen and the commercial use of sea resources. Although activities using these resources are found along the entire coastal area of Florida, the various kinds of fishing industries have become concentrated in certain coastal communities. Florida possesses more miles of coasts than any other state. Off this long coastline there are many square miles of water which contain about 600 varieties of fish. Sixty of the varieties are edible, but many are not used at all.

FLORIDA'S RANK AS A FISHING STATE

From Figure 23C you learned that commercial fishing is sixth in value of production among the basic industries in

Figure 116 — A fishing port



COMMERCIAL FISHING IN THE SOUTHEAST, 1950

State	*Pounds (thous.)*	*Value ($ thous.)*
Florida	118,479	15,705
North Carolina	172,339	6,800
Mississippi	91,815	4,454
Georgia	17,351	3,584
South Carolina	14,727	2,810
Alabama	18,874	2,627
Tennessee	20,529	1,428

Figure 117A

Florida. Consult Figure 117A to determine Florida's position among the southeastern states by value and number of pounds of the catch of all fishery products in 1950. You find that Florida ranks first in the Southeast in value. How does it compare in value and number of pounds with other states having major fishing industries (Figure 117B)? Since Florida has a long coast line, vast fishing grounds, and an unusually large number of edible fish in its waters, do you not wonder why Florida ranks sixth in the fishing industry among all states and why the fishing industry produces less than one per cent of the total production value of the basic industries of Florida? As you study the rest of this chapter, look for reasons to help you explain why the fishing industry is not more highly developed.

COMMERCIAL FISHING IN THE UNITED STATES, 1950

State	*Pounds (thous.)*	*Value ($ thous.)*
United States	4,884,909	343,877
California	1,138,229	81,605
Massachusetts	591,188	40,767
Louisiana	332,844	25,498
Washington	118,694	19,070
Virginia	313,799	16,119
Florida	118,479	15,705
New York	142,915	15,625
Maine	356,266	14,688

Figure 117B

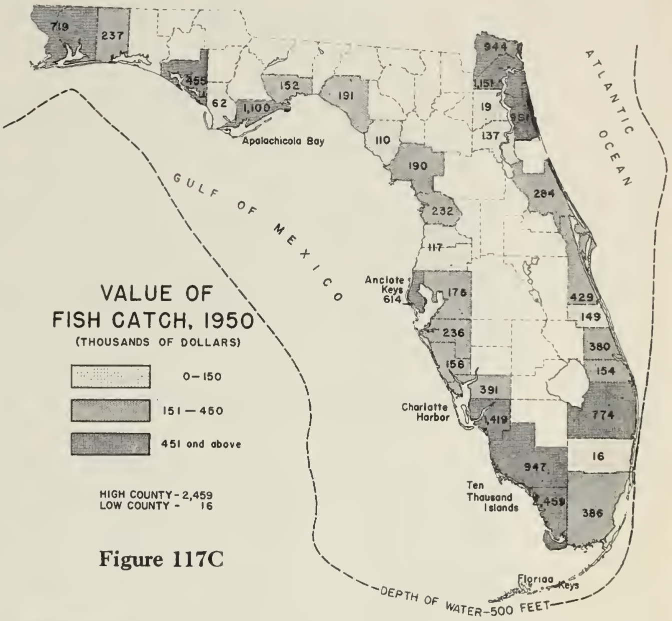


Figure 117C

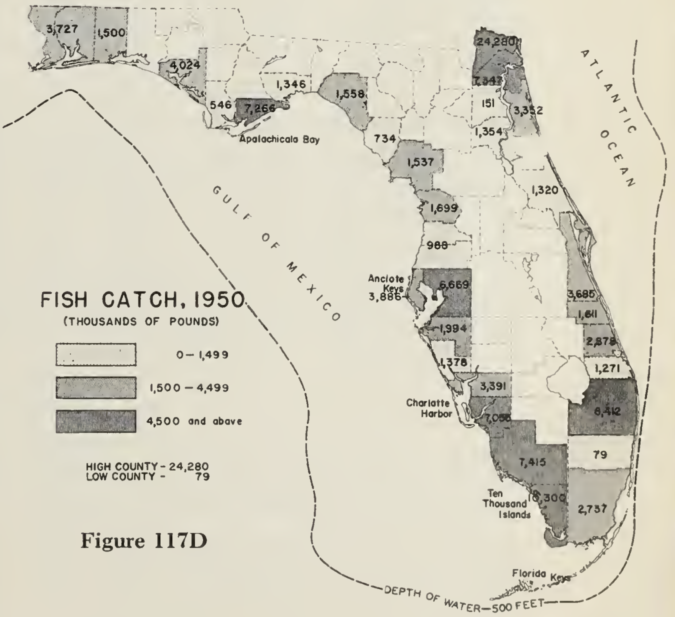


Figure 117D

FLORIDA'S FISHING INDUSTRIES

Find on the map in Figure 117C the counties producing over $450,000 in fishery products annually. Write on a separate sheet of paper the name and value

TOTAL CATCH OF FISHERY PRODUCTS BY REGIONS

Florida Region	*Value ($ thous.)*		*Per Cent of State Total*		*Pounds (thous.)*		*Per Cent of State Total*	
	1940	*1950*	*1940*	*1950*	*1940*	*1950*	*1940*	*1950*
East Coast.	1,490	5,750	30	36	130,138	56,466	70	48
West Coast.	3,452	9,955	69	63	54,676	62,013	29	52
Lake Okeechobee.	63	*	1	*	2,678	*	1	*

*Commercial fishing prohibited.

Figure 118

for each of the ten counties, putting at the top of the list the county with the highest value of fish catch in 1950 and arranging the others in order of decreasing importance. From the map in Figure 117D find the eight counties that produced the largest catch of fish by weight. Make a second list of counties, arranging them in order of their importance by number of pounds. By comparing the two lists, do you find that the counties producing the highest value of fishing products also produce the largest volume of fish? Suggest reasons for the facts you find. Can you tell from Figure 117C which group of counties produces the higher value of fishery products — the east coast counties from Nassau to Dade, or the west coast counties from Monroe to Escambia? Can you tell from Figure 117D whether the east coast or the west coast produces the larger volume of fish? Use Figure 118 to check your answer. As you read, look for the reasons to explain the change from the 1940 figures to the 1950 figures.

Use Figures 117C and 117D to determine if your county has any *commercial* fishing. If it has, what is the value in dollars and volume in pounds? What per cent is each of these of Florida's total shown in Figure 117A? What statement can you make regarding the relative importance of your county in the fishing industry of Florida?

The Gulf Stream swinging in from the tropics along Florida's coast, together with a subtropical location, causes the waters of the fishing grounds to be warm. Hence, many fish are different from those of the cool waters of northeastern United States and of the Pacific Coast states. Figure 119 shows the principal kinds of fishery products taken from Florida waters. The products are listed in two groups: those used for food and the non-edible ones used for other purposes.

FOOD FISH

Though food fish produce in total over fifty times as much money as non-edible sea resources, their total volume is considerably less than that of the non-edible products (Figure 119). Some of the leading fishing ports to which the commercial catch is brought are listed below. A great many small ones are not named. Place the names of these centers on an outline map of the State. As you continue your study, write in on your map the kinds of fishing activities found along Florida's coast. Find in the following paragraphs some reasons why fishing is centered in these towns.

*** EXPLORING FOR YOURSELF—Check the value and production figures for fisheries since 1950. What changes occurred? Why?

FLORIDA'S FISHERY PRODUCTS, 1950

KIND	EAST COAST		WEST COAST		STATE TOTAL	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
	(thous.)	*(thous.)*	*(thous.)*	*(thous.)*	*(thous.)*	*(thous.)*
Shrimp	9,267	$2,687	13,639	$3,692	22,906	$6,379
Mullet	7,086	735	22,257	2,340	29,343	3,075
Snapper	516	98	4,624	1,074	5,140	1,172
Sea Trout	1,467	292	3,216	658	4,683	950
Grouper	891	89	5,377	484	6,268	573
Spanish Mackerel	3,577	322	2,313	208	5,890	530
Pompano	407	224	408	225	815	449
Oysters	30	13	872	393	902	406
Crabs	5,485	276	723	53	6,208	329
Crayfish	937	168	628	113	1,565	281
King Mackerel	1,161	163	418	56	1,579	219
Bluefish	990	157	408	53	1,398	210
Drum	258	27	991	116	1,249	143
Catfish and Bullheads	559	84			559	84
Snook	90	11	484	58	574	69
Yellowtail	95	19	250	49	345	68
Scallops			125	62	125	62
Other Food Fish	2,390	170	3,724	177	6,114	347
TOTAL FOOD FISH	35,207	5,535	60,457	9,810	95,664	15,345
Sponges			22	130	22	130
Menhaden	21,259	215	1,534	15	22,793	230
TOTAL NON-EDIBLE	21,259	215	1,556	145	22,815	360
GRAND TOTAL	56,466	$5,750	62,013	$9,955	118,479	$15,705

Figure 119

Fernandina
New Berlin
Mayport
Jacksonville
Palatka
Tampa
St. Augustine
New Smyrna
St. Marks
Carrabelle
Apalachicola
Panama City
Pensacola
Fort Myers
Key West
Port St. Joe

Reasons for Importance. Two reasons why the food fish industry is valuable are that Florida waters contain so many food fish and that there are many excellent fishing grounds. By consulting a large map of Florida you will find the whole east coast has long, low sand bars that have been built up by the ocean. Behind these bars are shallow lagoons cut off from the sea except for a few openings. In these warm, protected waters many salt water fish come in winter to escape the cooler, rougher waters of the open ocean. Warmer, more shallow waters also afford excellent spawning and feeding grounds for fish. The map shows that Florida's west coast has fewer sand bars and lagoons. Nevertheless, along this coast from the Florida Keys to Pensacola there is an extensive fishing ground somewhat different from that just described for the east coast. Here, from Anclote Key to Charlotte Harbor (Figure 117C) and in the area farther north, numerous food fish abound on the rock ledges in shallow water near the coast and in gullies between the ledges. Farther out from shore, fish are most numerous in gullies between rocks where there are living corals and soft rocks. By consulting an atlas map showing the various depths of water in the Gulf of Mexico, you will find that all along the shore from the Florida Keys around the Gulf of Yucatan the water is fairly shallow, less than 500 feet deep. Most fishing is carried on where the depth of water is less than 300 feet. Such shallow ocean waters are called *banks.* Notice on the map that the east coast of Florida has a narrower coastal bank than that on the west side of the State, and that most of it is in the northeastern part. Figures 117C and 117D show you the outline of the fishery banks on the coast. On a large map of Florida compare the numbers of rivers and harbors on the east and west coasts. Do you not find that the west coast has many more of both? In the lower portions, or estuaries, of Florida rivers, where ocean tides meet with the fresh waters, are found many kinds of food fish such as shad, mullet, sea trout, red bass, and sheepshead. This description of conditions on Florida's west coast will help you explain why the fisheries of this coast produce more food fish than those of the east coast. In addition to these extensive fishing grounds off the coasts of Florida, there are numerous fresh water lakes and rivers where some commercial fishing is done. The St. Johns River and Lake Okeechobee* are the principal sources of this freshwater commercial catch.

Equipment Used. In Florida waters fish are caught mainly by three kinds of equipment: the gill net, the seine, and the line. Look up "gill net" and "seine" in the dictionary to learn what they are and how they are used. In many American waters various other types of apparatus, such as pound nets, weirs, trap nets, and fyke nets, are used. These nets cannot be used in Florida water, as large destructive fish would tear holes in them. Another reason is that the subtropical waters cause the cord in stationary nets to rot out very rapidly.

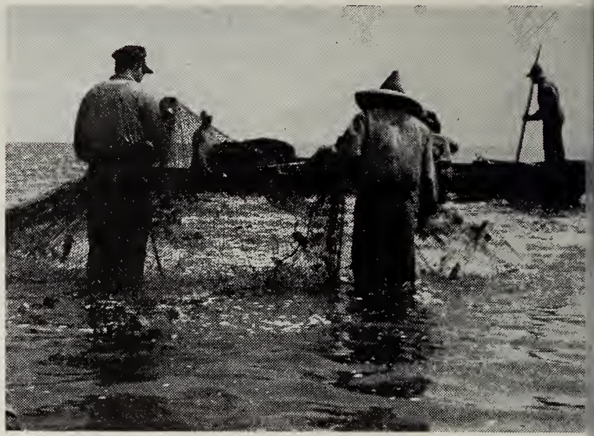


Figure 120 — Mullet fishing

Mullet. About one-third of Florida's total catch of food fish in volume and one-fifth of the value consist of mullet. They are abundant and widely distributed in the coastal waters. Thus they are inexpensive and are an important part of the diet of many people the year around. A scene typical of mullet fishing is shown in Figure 120. Along which coast are more mullet taken (Figure 119)? On your fishing map of Florida write the word "mullet" at one or two places along the east coast, and at several scattered places along the west coast.

Red Snapper. Pensacola as a fishing center is the home of the red snapper fishing fleet. Write the words "red snapper" on your map near Pensacola. Third in rank by value among the food fish (Figure 119), snapper are frequently caught in Florida waters, but most of

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*Fishing prohibited in some years.

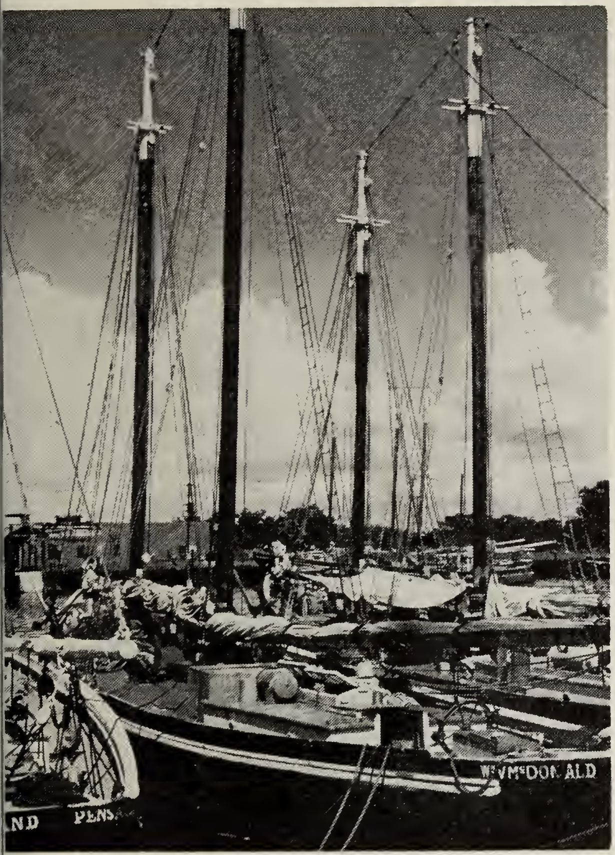

Figure 121 — Snapper fleet at docks

the commercial catch comes from the Gulf of Mexico banks near Yucatan. Boats go out loaded with ice and return to port when the holds are full of fish, often remaining on the banks from one to three weeks (Figure 121).

Shrimp. From Figure 119 you can see that shrimp rank first in value for 1950. For several years overfishing of the shrimp grounds caused a lowered catch. Decreased landings from grounds near Fernandina, New Smyrna, Cape Canaveral, Apalachicola, and Pensacola have been more than compensated for by the finding of new grounds off Key West and on the banks near Campeche, Mexico. Because of the uneven coral bottom of some of these grounds, newer types of equipment have had to be developed. Also, there has been a trend toward building larger hulls for shrimp boats. Live shrimp, which are the most popular bait for sport fishing, are caught in waters near resort areas. On your fishing map write the word "shrimp" near Fernandina, New Smyrna, Cape Canaveral, Key West, Ft. Myers, Tampa, Apalachicola, and Pensacola.

Clams. Probably the largest bed of hard clams in the United States extends along the southwest coast of Florida in the region of Ten Thousand Islands. In 1940, 708,000 pounds were dredged, while in 1949 only 5,300 pounds were reported. This reduction was due, in part, to the closing of the canning plants. Better methods of marketing these clams need to be explored. Write the word "clam" on your map in the region of the Ten Thousand Islands.

Oysters are found more or less continuously over all of Florida's long coast. Although Apalachicola is at present the center of production, in the past a great industry thrived in almost all of the state's leading estuaries. However, now the entire annual output of oysters from Florida waters would not supply the demand in the single city of Miami. Oyster fisheries produced $224,000 in 1930, $62,000 in 1940, and $406,000 in 1950. See if you can explain this drastic decline and upward trend after reading the next few paragraphs.

Today four-fifths of the commercial catch comes from the Gulf Coast (Figure 119) at Apalachicola, East Point, and Carrabelle. Locate the oyster industry on your fishing map. The somewhat limited conditions under which the oyster can thrive, together with the fact that it fastens itself permanently to the bottom, make it easy to deplete a sea resource which cannot run away. Man has overfished the beds and used destructive fishing methods since the industry started. Fortunately, however, he has learned how to build up new oyster beds and to restock old ones. Water over oyster beds must be protected from pollution. Many areas have been condemned for oyster fishing because of pollution from sewage from cities or industrial waste products. Pensacola and St. Andrews Bay and the nearby bayous contain oysters which can be marketed when the waters are púre. The people of Pensacola and Panama City are considering plans for some type of sewage disposal that would prevent pollution of coastal waters. The Gulf Coast communities are putting into practice better methods to prevent pollution and are expanding some beds.

Other Sea Food Products. The table in Figure 119 shows relative value and volume of many more kinds of food fish products that help to vary the diet of Florida people. With which ones are you familiar? Are many found near your home? Since there is not space here to describe all kinds of fishing, perhaps you would be interested in making a special study of the fisheries in your section of the state or those of the east coast, the west coast, or Lake Okeechobee.

NON-EDIBLE PRODUCTS

Florida's *"trash" fish production,* used primarily in fertilizer manufacture, is subject to wide fluctuation. For example, in 1943 the catch topped 200 million pounds, only to drop to 35 million pounds in 1944. In 1948 production was back up to 105 million pounds. About 95 per cent of this was menhaden. A 75 per cent decrease in the Nassau-Duval menhaden fishery and the closing of the east coast shark fishery caused 1949 production to drop slightly below 50 million pounds. Note the production of menhaden for 1950 on the table in Figure 119.

The fishing industry today is in the same position in which the slaughter houses found themselves two generations ago. A big part of the beef carcass was discarded as trash. Today this brings as much or more value than what was formerly considered the usuable part. So it may be with the fish catch. The shrimp trawls now discard considerable quantities of "trash" fish. Marine by-products such as shrimp heads and crab husks, as well as "trash," can be used in fish meal for dietary supplements for animals as well as for plant fertilizers. The fishing industry is slow to utilize this source of added income.

Sponges are very light in weight and command a high price. In some years the largest income from a single fishing activity in Florida has come from the sponge industry. Approximately 95 per cent of the Nation's supply came from Florida, since no other waters of the United States contain sponges in commercial quantities. Find the west coast town of Tarpon Springs in your atlas and add its name to your fishing map. Write "sponges" on your map near Key West and Tarpon Springs. Sponge fishing has been carried on from the Florida Keys to St. Marks.

*** EXPLORING FOR YOURSELF—

1. The Marine Laboratory at the University of Miami was established as a fishery and oceanographic center for the entire southeast. Florida State University in Tallahassee has a similar center on the Gulf Coast. Make a report to your class on the work of these laboratories. If your library does not have material about them, ask your teacher or librarian to write the Florida State Board of Conservation for information.
2. Some areas have been affected by the " red tide." It is thought to be caused by minute organisms in water—so numerous as to cut off oxygen supply. If you can find information, report to your class on incidence and effect of this threat to Florida's fish resources.
3. Investigate the turtle industry in Florida. What laws protect them? Where are they caught commercially? How valuable are they?
4. What can you find out about sea weeds as a potentially valuable marine resource of the long Florida coast line? Refer to Bulletin 7, The Educational Series, "Florida's Seaweeds and Their Commercial Use," Marine Laboratory, 1950, published by the State Board of Conservation.

By far the major sponge fishing activity centers at Tarpon Springs, where Greek colonists and their descendants have developed the largest sponge market in the world.

Since 1940 the "bottom" literally fell out – not of the market, but out of the source of supply. In 1936 sponges produced $938,000, while in 1950 with higher prices they were valued at only $130,000. The catch per boat is greater, but this fact does not necessarily indicate a natural increase in sponges; rather it may suggest some illegal working of shallow hooking areas. A fungus disease in 1939-1940 destroyed practically all the deep water sponges and many of those in the shallower bars. A 1947 survey did not show any trace of the parasite. Another major reason for the decline was that the demand of the war years had increased the volume of the sponge fishing beyond the reproductive capacity of nature. It will be several years before production can increase to pre-war levels. This has affected the lives of many people in the Tarpon Springs area.

BETTER UTILIZATION

Regulations. The bulk of the catch of most Florida fish is taken in the winter for three major reasons: fish follow the Gulf Stream and warm weather south along the east coast; closed seasons declared by law protect fish during summer spawning periods and winter is the season when the thousands of tourists and migratory workers add greatly to the size of the local market for fresh fish. It is no longer believed that fish are so plentiful that man cannot completely destroy the supply. Although sea products are among the resources which can be replaced, there is danger today of greatly depleting the supply. The Florida legislature has passed laws designating closed seasons during spawning periods, limiting the size of fish taken, and regulating the mesh of nets and the size of sponge hooks. Other laws provide for the restocking of oyster and sponge beds and fresh water lakes and rivers, and prohibit the pollution of streams with factory wastes, sewage and other refuse. Enforcement of these measures is necessary to protect the livelihood of thousands of fishermen.

Uncertainty of Income. While fishing is perhaps the oldest commercial industry in the State, it has realized only the most meager of its possibilities. One of the handicaps is the required financial outlay which is often out of proportion to the value of the catch. Although as a whole, fish for seafood require less expensive gear than some other industries, to the individual fisherman it represents a large sum of money. Expenses are also increased by losses from trash fish which are not used for food or for other purposes. At times, as much as three-fourths of the entire catch is thrown back into the sea as non-marketable. The seasonal character of fishing presents further difficulties. Closed seasons or periods of bad weather often find the fisherman in need of financial assistance. His earnings during the productive season may be too little for year round expenses.

*** EXPLORING FOR YOURSELF—You might be interested in finding out more about the various kinds of sponges and the methods of hooking and diving for the catch.

Fluctuating market prices for sea products and physical hazards involved make fishing an uncertain source of income. The fisherman constantly faces danger to life and limb, danger from storms, paralysis in diving for sponges. Sometimes so many fish are caught that the market for fresh fish becomes glutted. The fishermen and wholesale fish firms suffer losses because their fish do not keep until they are sold.

Marketing Problems. The suggestion has been made that fishermen need an improved marketing organization similar to that of the citrus producers to maintain a high quality for their products, to keep from glutting the market, and to cooperate in advertising fish products. Conservation of fish through efficient marketing involves the use of methods and equipment that will insure a high quality of fish for food and make it unnecessary for the producer to throw away spoiled fish. A significant trend is shown in the installation of freezing equipment. It is evident that the freezer is an answer to the marketing situation. When fish are abundant and prices are cheap, quick freezing for future selling, when fish will be scarce and prices are high, is a solution. Plastic packaged and fileted frozen fish that are pan ready will encourage purchase by the housewife who has turned down the unsightly and unwieldy whole fish.

The largest demand is for fresh fish, which are difficult to market in good condition because they are highly perishable. More than half of the sea products of Florida are consumed at home or in nearby southeastern states. Large population centers of interior United States are far from Florida's fishing grounds. The long truck hauls necessary to get products to profitable markets make reicing of fish necessary. Express cars are still used on the east coast, but most of the fresh fish is shipped now by truck. Improved freezing and transportation facilities will create a larger demand for many food fish that now are widely used, and would develop a demand for others that at present are little known.

Future Needs. Better utilization of fish resources requires not only improvement in refrigeration, transportation, and marketing facilities, but also more complete use of both edible and non-edible sea products. There is need for more plants for canning, salting, smoking, quick-freezing, or otherwise preserving fish. Many waste materials from the fishing industry, classed as fish scrap, can be ground up and made into nourishing meal for feed to livestock or into fertilizer. The use of many other sea products needs to be explored to enable the fisherman to have a stable income.

*** EXPLORING FOR YOURSELF—

1. In 1952-1953 some shrimp and red snapper fishermen found themselves in difficulties with the Mexican government. The Mexican officials maintained that they were fishing inside of Mexico's territorial waters. Find out how this was solved and give your classmates an oral report about your information.
2. Report to your classmates the latest information about Florida's fishing laws—closed seasons, nets, pollution, etc.

Chapter 13

Manufacturing Florida's Products

Manufactured products used by Americans are of a great many kinds. They include food, clothing, home furnishings, school equipment, automobiles, farm machinery, toys, and many other things. Some of these products are the result of complicated processes which result in handsome articles little resembling the raw materials from which they came. The automobile your family drives is a good example. It scarcely reminds you of the iron ore and other raw materials from which it is made. For other manufactured articles, raw materials have been treated more simply and are changed somewhat less. Canned foods, for example, are still recognized as corn, peas, meat, etc.

Have you ever wondered how many of the manufactured articles which you and your family and friends commonly use are made in Florida factories? One way to answer this question is to list them under two headings: (1) those manufactured outside the state and (2) those manufactured in Florida. Many articles such as those in your classroom and the kitchen at home have on them names and addresses of manufacturers. Canned goods are labelled with similar information. You may have to ask adults where some things come from. What do your lists suggest about the importance of manufacturing in Florida? The table in Figure 126 will help you to check your conclusion. In 1951 Florida ranked twenty-ninth among the states in value added by manufacture. Note the rank of Florida in the Southeast. As you continue your study, look for reasons to explain why Florida and the Southeast do not rank higher in manufacturing.

*** EXPLORING FOR YOURSELF—Many of the machine-made manufactures that we are accustomed to buying in the stores were once hand-made at home. Ask the older people in your community to tell you what they remember of such activities.

VALUE ADDED BY MANUFACTURE IN SELECTED STATES,* 1951

State	*Thousands of Dollars*
Florida	568,672
New York	11,933,729
Pennsylvania	9,421,770
Ohio	9,396,104
Illinois	8,835,548
California	6,133,387
North Carolina	1,948,452
Georgia	1,332,659
Tennessee	1,294,384
Alabama	1,192,019
South Carolina	926,277
Mississippi	331,326

*Value of finished products less cost of raw materials (previously produced in other industries), and certain other lesser costs.

Figure 126

A LATE START

For many decades the South, of which Florida is a part, devoted all of its energies to agriculture, with cotton and tobacco the chief money crops. There were many reasons for doing so. The demand for cotton and tobacco was great in England and later in Northeastern United States. Needed manufactures could be purchased from those places with money from the sale of cotton and tobacco. Thus, numerous resources useful for manufacturing in the South remained practically untouched. Many people developed the attitude that making a living by manufacturing was undesirable and undignified.

Conditions in the Northeast were different. There cash crops did not thrive and men turned to other ways of making a living. Shipbuilding and textile manufacturing grew and expanded while the South remained largely agricultural.

The War Between the States caused a boom in manufacturing in the North, but left the impoverished South to rebuild its homes and farms. Agriculture was still for many decades the major economic activity. Hence the southeastern United States was slow and late to start manufacturing. In recent years, however, changes are taking place more rapidly. Perhaps you know of new manufactures that have come to Florida or nearby states.

Find from Figure 126 Florida's rank among the seven southeastern states shown. The states that rank above Florida have more of such raw materials and resources as coal, petroleum, waterpower, iron, and cotton to use in manufacturing. Florida, you will recall, is in some respects a new or pioneer state, still in the process of developing.

RANK OF MANUFACTURES AMONG FLORIDA INDUSTRIES

Consult Figures 23A and 23C (Chapter 3) to see how manufacturing compares with the other basic Florida industries in number of workers employed and in value produced. How does manufacturing compare with the major service industries (Figure 24) in number of workers employed? How does the value added by manufacturing in Figure 23C compare with the $700,000,000 to $900,000,000 income from the tourist industry? Can you give any reason for all of these differences? Return to this question when you have completed your study of this chapter.

To most people the term *manufactures* means such finished articles as toys, clothing, and house furnishings. Not everyone realizes, however, that all machine processes, such as grading and packing fruits and vegetables, sawing logs into lumber, bottling drinks, and baking bread and cake in city bakeries, are also classed as manufacturing. Did the lists of manufactures you made include some of these things?

PRINCIPAL MANUFACTURING COUNTIES IN FLORIDA, 1947

	Number Establishments	*Value Added (thous.$)*	*Number Employees 1947*	*Number Employees 1950*	*Gain or Loss*	*Per Cent Gain or Loss*
Dade	534	$45,528	9,271	12,649	3,378	36
Hillsborough	333	59,796	16,179	16,123	−56	*
Duval	308	66,736	12,771	13,678	907	7
Pinellas	157	8,332	1,945	2,638	693	36
Orange	139	10,888	2,752	3,086	334	12
Polk	134	22,603	5,076	4,897	−176	−4
Palm Beach	91	5,649	1,206	1,264	58	5
Escambia	78	21,039	3,434	4,619	1,185	34
Leon	36	5,255	1,347	1,425	78	6
Taylor	11	6,566	1,586	1,518	−68	−4

*Less than ½ of 1 per cent.

Figure 127A

WHAT AND WHERE ARE FLORIDA'S MANUFACTURING INDUSTRIES?

Find in Figure 127A how Florida counties ranked in value added by manufacture in 1947 (this date is the latest for which this information is available by counties). Compare Figure 127A with Figures 127B and 127C. What counties stand out in number of persons employed (1950) as well as in value added by manufacture (1947)? Can you name the chief city in each of these counties? How does your county rank? According to the United States Census of Manufactures, an industrial area consists of a city, the county in which it is located, and any adjoining county or counties which together have at least 40,000 workers. According to Figure 127B does Florida have such an industrial area? What have you already learned about Florida that helps you to explain the differences shown on these maps? Would Figure 10B (Chapter 2) help you?

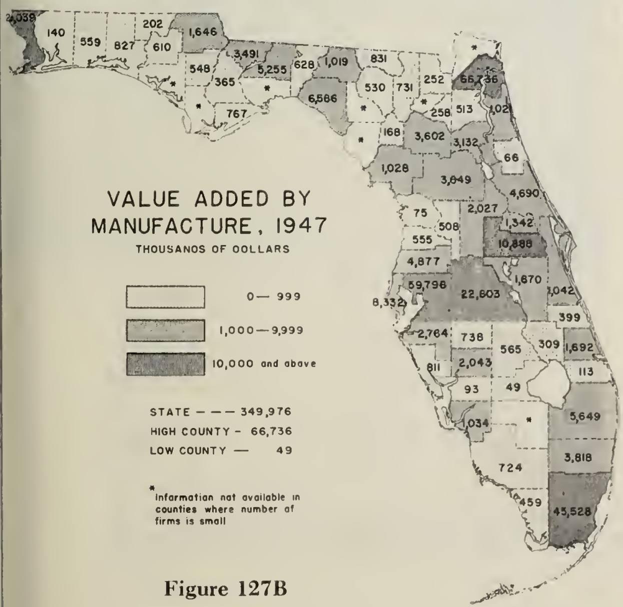

Figure 127B

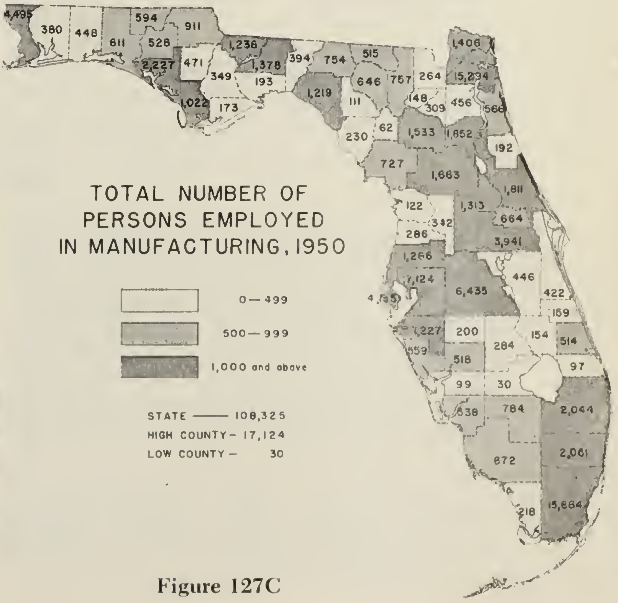

Figure 127C

LEADING EIGHT GROUPS OF FLORIDA MANUFACTURES, 1947

Manufacturing Group	*Total Number of Establishments*	*Total Number Persons Employed*	*Value Added by Manufacturing (thous. $)*
Wood Manufacturers	**643**	**23,468**	**$110,085**
Lumber and Products	495	15,712	47,184
Paper and Allied Products	31	5,696	55,777
Furniture and Fixtures	117	2,060	7,124
Food and Kindred Products	**701**	**19,565**	**$92,324**
Miscellaneous Food Preparations	198	3,222	18,252
Beverages	165	2,760	15,219
Canning, Preserving, and Freezing	112	6,252	24,498
Tobacco Manufacturers	**77**	**8,732**	**$18,723**
Cigars	74	8,613	18,591
Printing and Publishing	**397**	**6,288**	**$34,706**
Newspapers	151	4,507	26,412
Commercial Printing	185	1,305	5,968
Chemicals and Allied Products	**162**	**4,724**	**$28,774**
Fertilizers	54	2,404	14,330
Naval Stores	13	993	6,046
Metal Manufacturers	**136**	**2,481**	**$12,595**
Primary Metal Industries	22	323	1,024
Fabricated Products	114	2,158	11,571
Stone, Clay, and Glass Products	**244**	**2,675**	**$12,809**
Transportation Equipment Ships and Boats	**90**	**5,409**	**$21,431**
Totals, leading 8 groups	2,450	73,333	$331,447
Totals, all groups, 1947	2,807	78,665	$349,976
Totals, all groups, 1951	....	105,100	$568,572

Figure 128

Many of the towns and cities of the State carry on such manufacturing as the making of bakery products, bottling of beverages, printing and publishing, and the making of candy, ice cream, and ice. Such food manufactures are intended largely for local use in the towns where they are made or in nearby areas. What other items in Figure 128 are also intended largely for local markets? Which are for markets outside Florida? Figures 129A and 129B show two major Florida manufactures.

Some of the manufacturing of the State

*** EXPLORING FOR YOURSELF—Find out what products are manufactured in your county, where the raw materials come from, and where the manufactured products are sold.

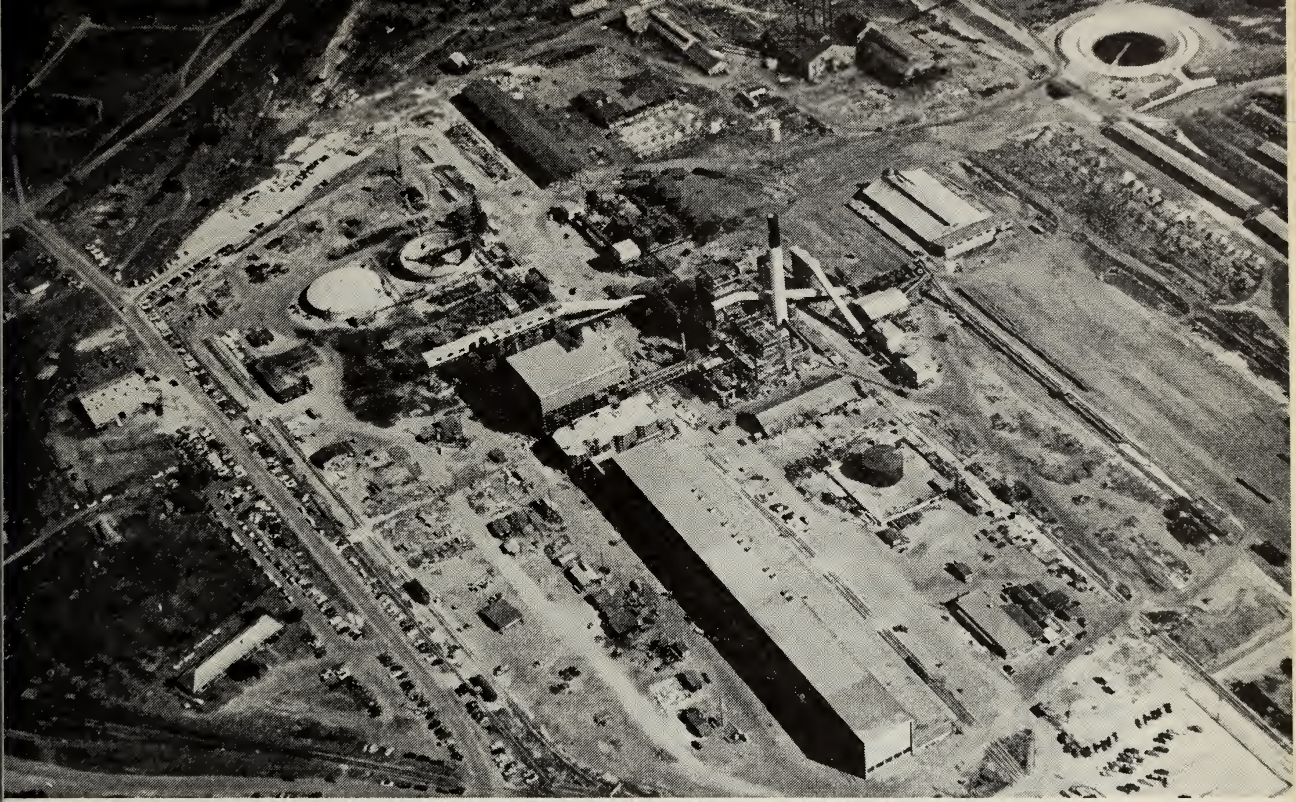

Figure 129A — A paper products plant in north Florida

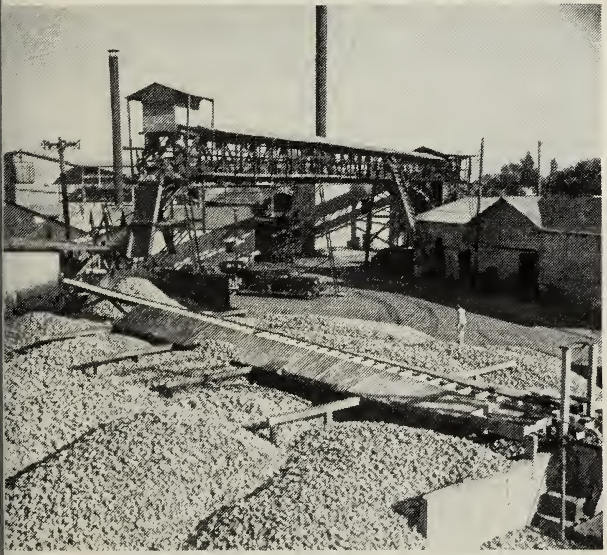

Figure 129B — An orange juice canning plant

is carried on outside of towns and cities. Many sawmills, for example, operate in the forests, moving about from place to place as timber supplies are exhausted. Some canning plants and crate and box factories are not in towns. Perhaps you know of other factories outside urban centers.

A MIXTURE OF ADVANTAGES AND HANDICAPS

Few places on the earth have all the resources needed for manufacturing. As you study the following pages, make a list of conditions that favor manufacturing in Florida — *advantages* — and one of unfavorable conditions — *handicaps.*

Raw Materials. All manufacturing depends on raw materials that have already been produced in such other basic industries as farming, mining, forestry, and fishing. Manufacturing, therefore, cannot thrive and grow unless people make wise use of land, water, minerals, and other natural resources to insure continuous production of needed raw materials. From what you already know about Florida from your study of these activities, you should be able to name several available raw materials. Study the groups of manufactures in Figure 128 and decide which are made from raw materials produced in the State and which from raw materials brought in.

You may be surprised to know that 42 per cent of the pulpwood used in Florida mills during 1952 came from adjoining states. You will recall that our manufactures of lumber have declined since our virgin forests were cut. Is it clear that wood manufactures depend on how we manage forest resources? Forest experts say that we can more than double our output of wood and other tree products. Could raw materials for any other groups of manufactures in Figure 128 also be increased by wise use of resources?

What have you learned that helps you to understand the leading position of wood manufactures and of food and kindred products in Florida? Note that Florida's lack of the major metallic minerals such as iron and copper prevent many manufactures important to our civilization. Metals for the few such industries we have are shipped in.

Power. In addition to raw materials, manufacturing depends also on power, that is, coal, oil, gas, or electricty to run machinery. From what you have already learned about Florida minerals, you know that the state lacks coal and produces too little oil to run factories. Unfortunately, the State also has little possibility for producing electricity with water power. As you know, most of Florida's land is flat and not very high above the sea (Figure 33). Therefore, rivers do not develop falls and rapids that can be harnessed for water power to make electricity. Since the land is flat, building of dams on streams to create artificial falls is also impossible in most places. Because of the lack of coal, oil, and waterpower, most of Florida's manufacturing industries have developed because their products do not require great amounts of power (Figure 128). Electricity for lighting, cooking, and manufacturing is made with fuel oil in several large power plants on the coast. Oil in large bulk shipments is brought most cheaply to these coastal centers in large ocean tankers. Gas for cooking and heating in cities is now often manufactured from fuel oil. Some coal, and large quantities of gasoline, are shipped into the State.

Labor and Markets. Successful manufacturing industries also depend upon workers in sufficient numbers and with needed skills. As you know, Florida's population has been growing for some time. Hence, the number of workers has increased, but they do not always possess the skills needed for special kinds of manufacturing.

A larger number of population also means more buyers of goods; that is, a larger market. Florida's population is, however, not yet large enough to provide local markets for great quantities of manufactured goods comparable to those of Northeastern United States with its many big cities. Therefore, manufactures from Florida must sell in other parts of the United States in competition with older and better established industries nearer the markets.

Transportation and Communication. Perhaps you have noticed how frequently transportation has been mentioned as an aid to other kinds of work in Florida. Turning train and automobile wheels and airplanes coming southward bring tourists into the State, and going northward carry Florida fruits, vegetables, and other products to markets. Ships from Florida ports take away fertilizer, wood products, and other surplus commodities to mar-

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1. Are all parts of the State served equally well by transportation lines? Can you tell why? Is your county well off in this respect?
2. Which cities are transportation centers? Can you give reasons?

kets. These same means of transportation bring into the State many articles that come from outside. Manufacturing industries in Florida make use of these necessary facilities in transporting raw materials and finished products and in making business connections.

Make a study of roads, railroads, and airlines in Florida with maps. For highways consult the road map you used in studying tourism. Secure from the State Department of Agriculture in Tallahassee a large sectional map of the State showing railroads. Commercial air line company maps showing air routes are easily obtainable also. These maps will help you answer the following questions:

Other Assets and Liabilities. For most manufactures a great deal of water is required. Florida's large supplies of surface and underground water are as necessary to the pulp and paper industries as are continuous supplies of longleaf and slash pine. As more and more water is used by industries and cities, problems develop. Reread the parts of Chapter 9 that deal with water resource problems.

Florida's warm winters make possible the use of more cheaply built factories. Expensive heating equipment is usually unnecessary.

Capital (money) with which to build and equip factories is necessary to manufacturing. Florida is still a new state, still growing and developing in many ways. Money is more plentiful than it once was, but must still be attracted from other parts of the Nation to Florida and the South as a whole for investment in manufacturing.

To attract new industries, the State offers various inducements. A state law exempts certain types of new manufactures from property taxes for 15 years. Local centers often construct buildings to be used rent-free for a period of years by new industries. Care should be taken in giving these special privileges that firms consider the welfare of the community as well as their own. Underpaid workers in temporary industries do not build prosperous and permanent towns, nor do tax-free industries carry their fair share of the cost of providing public services.

Check your list of advantages and handicaps with your classmates and your teacher. What do you think of the future of manufacturing in your state?

RECENT CHANGES

Growth in Manufacturing. Refer to Figure 132A to see how much Florida manufacturing has grown since 1939. Another measure of growth is shown in Figures 132B and 133. Some of the new plants added were quite small, others quite large. No record of employment by these groups of manufactures for this period is available, but the size of the plants and the number of employees are implied in the capital invested.

From 1947 to 1950, the total number of persons employed in manufacturing in Florida increased from 78,665 to 108,325, a gain of 29,660 persons, or 38 per cent. The largest gains were in Dade, Escam-

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*** EXPLORING FOR YOURSELF—A good way to study movements of raw materials and certain manufactured products is to watch loaded trucks and railroad cars in your community. If you are in a coastal city, ships may be observed also. For example, in some parts of the State train and truckloads of logs and pulpwood are common. In others fruits and vegetables can be seen in transport. Phosphate fertilizer and paper are shipped by water out of some centers. Automobiles and large machinery can be seen coming into Florida by truck, railroad, and boat. You can take pictures of typical commodity movements as part of your study of transportation and manufacturing.

CHANGES IN MAJOR FLORIDA MANUFACTURES

Manufacturing Group	*Number of Employees*			*Value Added by Manufacture (in thousand dollars)*		
	1939	*1947*	*1951*	*1939*	*1947*	*1951*
Paper and Allied Products	2,656	5,696	8,734	$11,466	$55,777	$112,540
Food and Kindred Products	14,331	19,565	19,636	30,369	92,324	101,998
Tobacco Manufactures	10,246	8,723	9,970	14,245	18,723	37,832
Printing and Publishing	4,192	6,288	6,420	12,695	34,706	34,590
Transportation Equipment	1,996	5,409	5,532	3,661	21,431	21,994
Totals, leading 5 groups	33,421	45,681	50,292	$72,436	$222,961	$308,954
Totals, all groups	64,544	78,665	105,100	$118,016	$349,976	$568,572

Figure 132A

bia, Duval, Pinellas, and Orange counties, in that order.

One-fourth of the new plants and plant expansions shown in Figure 132B were built in Dade County, which in 1939 already had the largest number of manufacturing plants in any county; one-eighth in the Tampa-St. Petersburg area; and one-eighth in Duval. It is not surprising that these areas with their dense populations attracted more industry. Much more surprising is the fact that three counties in west Florida (Bay, Escambia, and Gulf), with only 6 per cent of the State's population, gained about one-third of the total value of new industrial plants and plant expansions.

A War Boom. A number of Florida towns and cities experienced booms during World War II, as shipbuilding or other industries were suddenly developed to meet emergency needs. New housing projects were hurriedly built for thousands of new workers and their families. School authorities made every effort to care for

NUMBER OF NEW MANUFACTURING PLANTS AND PLANT EXPANSIONS
January 1, 1951 – March 31, 1953

Manufactures	*Number of New Plants*
Chemicals	18
Food and Kindred Products	16
Fabricated Metal Products	13
Machinery (except Electrical)	13
Stone, Clay, and Glass Products	9
Mining and Quarrying	8
Apparel and Other Finished Fabric Products	8
Transportation Equipment	8
Lumber and Wood Products	8
Paper and Allied Products	7
Furniture and Fixtures	7
Electrical Machinery and Equipment	7
Total	122
All Others	39
Total	161

Figure 132B

*** EXPLORING FOR YOURSELF—If your community is growing in manufacturing, find out whether water problems have developed or are likely to develop and what is being done about them.

NEW CAPITAL INVESTED IN MAJOR MANUFACTURING INDUSTRIES
January 1, 1951 – March 31, 1953

Industry	*Investment*
Paper and Allied Products	$88,000,000
Textile Mill Products	85,000,000
Chemicals and Allied Products	69,000,000
Fabricated Metal Products	8,000,000
Transportation Equipment	8,000,000
Food and Kindred Products	5,000,000
Total	$263,000,000
All Others	87,000,000
Grand total	$350,000,000

Figure 133

the added numbers of school children that appeared almost over night.

Most of the new factories constructed during the War were used for building ships. Other new industries included dehydration and concentration of fruits and vegetables for shipment overseas, and the making of prefabricated barracks, hospitals, furniture, and other wood products for use in war. The construction of camps, airfields, bases, and housing for the armed forces stationed in Florida added to the boom through the demand for new workers and more manufactured products. Note how important wood products were to many of these activities. In fact, timber resources were drawn on more rapidly than natural growth could replace them.

When the war ended, many of the factories that had been making war equipment for the United States government closed because they no longer had a market. Florida, you will remember, has no coal or iron ore, and therefore cannot compete with manufacturing centers nearer sources of power and raw materials for heavy industries. It is hard to estimate how much Florida's manufacturing and working population were increased permanently by the war boom. In a few instances war industries continued to operate; in other instances new kinds of industries used the factories already built. Many workers who came to get employment in war industries stayed and found employment in other types of work. Many people who as members of the armed forces became acquainted with Florida, have returned as permanent residents and have become workers in the State.

FUTURE OF MANUFACTURING

Since Florida is interested in the development of more manufacturing, what kinds and how much may be expected? Your study thus far should make it easy for you to understand why some kinds of factories are not likely to be built. Perhaps the most likely increases are in the kinds of manufacturing that Florida already has. As the population of the State grows, more manufactures can be sold in local markets, and industries that take care of the needs of Florida's people can grow. Florida's almost year-round tourist season increases the consuming power of the population. Sometimes a certain kind of manufacturing declines. The cigar industry, for example, has become smaller partly because so many people now smoke cigarettes rather than cigars, and because the hand-made Tampa cigars must compete with those made by machinery.

Some new kinds of manufacturing for which Florida is suited are being developed. Some new factories are making more finished products from some of our raw materials. For example, the naval stores which are first processed into turpentine and resin are being used as materials in the making of such finished products as paints, varnishes, plastics, soap, and perfume. Can you think of other raw materials produced in Florida that might be made into more finished products?

Experimentation is constantly finding new uses for products we already have or ways of supplying others. For example, the making of frozen citrus cencentrates has been one of our fast growing industries since it was started in the early 1940's. The use of citrus waste for fertilizer and cattle feed and the use of crushed sugar cane stalks and palmetto roots to make wall board are other examples.

In spite of the seeming preference of certain types of industry for certain parts of the state because of natural resources, labor supply, markets, or for other reasons, the over-all picture for Florida is one of diversification of industry. Do you think it is better for Florida to develop diversified industry or to concentrate on a few special manufacturing industries? Give your reasons.

To carry on the development of the kinds of industry suited to Florida, continuous research is necessary to discover new resources, to make better use of those already known, and to find better ways to insure the sustained supply of raw materials for manufacture. Also, there must be more capital to invest in industry and more trained workers. Production in this modern machine age requires training of minds and hands. Industries that make the most highly finished and highest priced goods use the most skilled and best paid workers.

*** EXPLORING FOR YOURSELF —

1. Discuss with your teachers the courses in your school that will help train industrial workers.
2. Visit an industrial plant and find out all you can about the number of workers employed and the average training and pay.
3. Invite some person acquainted with the problem of water conservation in Florida to talk to your class on how water supply affects the development of industry.
4. Make a list of the items you use in the school room and find out where each was made. How many of the items could be made in Florida? How many *were* made in Florida?
5. Watch newspapers and magazines for clippings to add to your scrapbook on new industries started in Florida.

Chapter 14

How Well Florida's People Live

You read and hear a great deal about how well Americans live. It is true that a larger portion of the people of the United States than of most nations enjoy conveniences and luxuries and have opportunities for education and recreation. But that does not mean that all Americans live on a high level. There are in the Nation extreme contrasts. The poorest families live in shacks or tenements, have diets insufficient for good health, have little opportunity for recreation and less for saving. The wealthiest families have luxurious homes, a rich and varied diet, and opportunities for the best education, recreation, and travel, together with whatever luxuries appeal to them.

All Americans cannot live like millionaires, but all should have the opportunity to attain a *level of living* which provides nourishing food; a well-equipped, comfortable home; good clothes; medical care; leisure hours and recreational opportunities to fill them; education for citizenship and a vocation; and some savings for security against old age or unemployment. Since alert, healthy people are such a valuable resource, most communities are concerned with improving levels of living.

MONEY INCOME

Most people want to live in comfortable houses and have to have all of the other advantages of a good level of living. But these things are dependent, to a large extent, on the amount of money that individuals and families have to spend.

Median Incomes. Consult Figure 26 in Chapter 3 to compare the median family income of Florida s counties with one another and with the state median. (Median is explained in the text near the map.) How many counties rank above the state median? The national median? What striking differences do you find among counties? What have you learned from your study of the ways in which Florida people use their resources that helps you to understand the facts shown on the income map?

*** EXPLORING FOR YOURSELF—How does the median income in your county compare with those of other counties? With the State median? The national median? Have you learned anything about using resources in your county that helps to explain these facts?

Family Cash Incomes. Median or average figures are helpful in making general comparisons. But they tell very littel about how much money families really have to live on. Figure 136 shows more clearly how well off financially Florida's families really are. Note that only 7 per cent of the families live on farms (rural farm); the other 93 per cent live in towns and cities (urban) or in small settlements in the country (rural non-farm). In what three income groups are most of the rural farm families? What per cent of the total are in these three groups? In which three income groups are most of the urban and rural non-farm families? Which is better off, the urban and rural non-farm family or the rural farm family?

ANNUAL CASH INCOMES OF FLORIDA'S FAMILIES, 1949

Cash Income in Dollars	*Per Cent of Families*	
	Urban and Rural Non-farm	*Rural Farm*
Under 500	9	18
500– 999	9	20
1,000–1,999	21	27
2,000–2,999	21	16
3,000–4,999	25	12
5,000–9,999	12	5
10,000 and above	3	2
Totals	100	100
Per Cent of Total Population	93	7

Figure 136

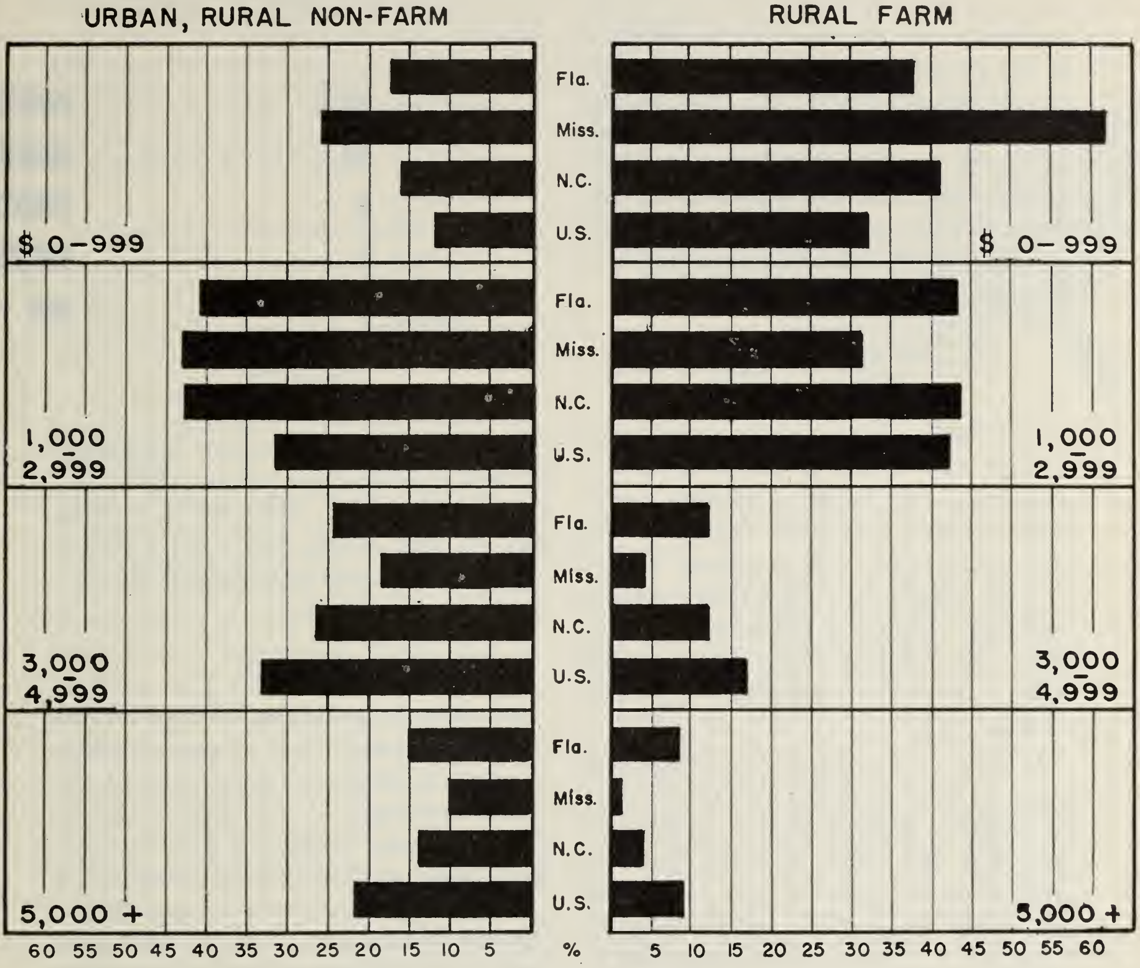
It is estimated by the United States Bureau of Labor Statistics that the median cash family income needed by the average city or town family of four persons in the United States in 1947 was $3,237 per year. Although costs vary somewhat, this figure is helpful in comparing incomes. Can you see why it would be more difficult to tell how much cash income a farm family needs? According to Figure 136 what per cent of Florida's urban and rural non-farm families have annual incomes less than $3,237? Does it seem to you that the rural farm families with less than $1,000 per year have enough income?

Study Figure 137 to compare the family incomes of Florida with those of the United States and other southeastern states. In each case there are two bars, one on the right for incomes of rural families and one on the left for urban and rural non-farm families. Secure from the graph and the table in Figure 137 answers to these questions:

1. How does Florida compare with the Nation and the other states shown in per cent of rural farm families?
2. In which two income groups are most of the rural farm families in all states and the Nation: How does the per cent of urban and rural non-farm families in these two low income groups compare with the per cent of rural farm families?
3. In which two income groups are most of the urban and rural farm families of all states and the Nation?
4. How do Florida incomes in each group compare with those of the Nation and the other southeastern states?

From your answers to these questions write a brief summary concerning incomes in Florida, the Nation and the Southeast. What have you already learned from this book that helps you to understand how

FAMILY CASH INCOME, 1949



	No. of Urban, Rural Non Farm Families (in thous.)	% of total	No. of Rural Farm Families (in thous.)	% of total
Fla.	668	93	53	7
Miss.	271	53	238	47
N.C.	654	70	285	30
U.S	34,184	86	5,638	14

Figure 137

Florida incomes compare? Do you think that better use of all Florida's resources would help to make possible higher incomes for more people? Give examples to support your thinking.

Some Other Financial Measures. Another index or measure of financial conditions of a people is the size of their bank deposits. In 1950 there was an average of $725 per capita in the banks of Florida. This same year the per capita deposits for the United States was $1,169. Tennessee had $626, Georgia $517, Mississippi $375, and South Carolina, $318.

Another index is the number of automobiles in use. Florida's registration of passenger cars and taxis in 1950 totaled

799,000, or 1 for every 3½ persons. The Nation in the same year averaged one car to 3¾ persons. All of the other southeastern states averaged one car to either five or six persons. Since many of the older cars in use are worth very little money, possession of an automobile does not necessarily mean a high level of living. Ten Florida counties registered 72 per cent of all the passenger cars in the state in 1950. Can you tell which ones they are? Why do you think so?

SOCIAL RESOURCES TO IMPROVE LIVING

To improve living, many needs must be met, and many problems solved in connection with health, education, recreation, housing and other aspects of living. Many needs and problems cannot be met wholly by individuals working separately. Hence communities on local, state, and national levels are assuming more and more responsibility for these matters.

As needs and problems arise communities meet them by creating and using public schools, departments of health and sanitation, and many other tax-supported institutions and agencies. You will recall that these are called *social resources* (Chapter 1). Note in the remainder of this chapter how many such social resources are mentioned. Perhaps you can recall some that were referred to in the chapters on "Using Florida's Land." In a democracy the community really is the people who live in it. They can determine how well or poorly its social resources work to help the people. The best results will be obtained only if the citizens understand the purposes of existing agencies and institutions and cooperate with them. Good citizens will do so and will insist that their agencies and institutions be used to achieve the purposes for which they were created. They will also insist that as new needs and new problems arise, social resources be improved or invented to meet them.

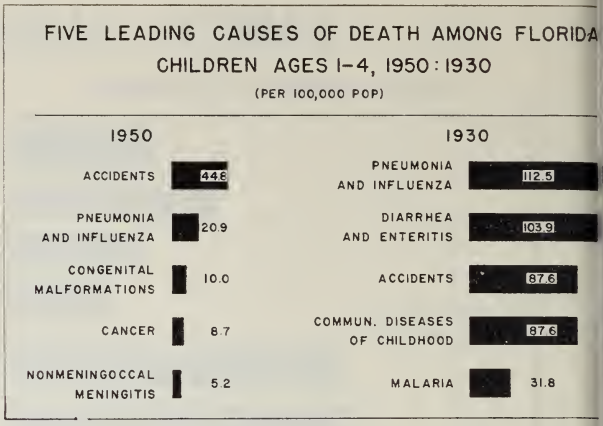


Figure 138

HEALTH

Whether at peace or at times of national emergency, such as war, a nation or state is strong in proportion to the health and vigor of its people. This depends on many conditions, such as a sanitary water supply, effective sewage and garbage disposal, control of preventable diseases, elimination of preventable accidents, a well balanced diet, and the availability of good medical care.

Signs of Progress. Most of you know that the United States has many doctors, clinics, and hospitals, and that our medical knowledge has increased greatly in recent years. We know too that the average person lives longer than he used to. An outstanding example of progress is the reduction in death rates of infectious diseases. From 1900 to 1949 the death rate per 100,000 people from all infectious diseases dropped from 676 to 79. For tuberculosis the rate has fallen from 194 to 27 and for diphtheria from 40 to 1. Such diseases as typhoid, whooping cough, measles, diarrhea, etc., have nearly disappeared as health problems. What do you learn from Figure 138 about progress in controlling death rates?

*** EXPLORING FOR YOURSELF—There are in every community many social resources. See how many of these you can find out about in your county. List them and describe what social purposes each performs and how well.

Evidences of a Serious Health Problem. Knowing of the progress being made in health matters, Americans were both shocked and surprised to learn that general health conditions in the United States as revealed by physical examinations for the national armed forces are highly unsatisfactory. Far too many men and women had to be rejected because of physical and mental unfitness. In World War I, 31 per cent of those examined were rejected, and in World War II, more than 30 per cent. No state had a rejection rate lower than 23 per cent in World War II. Southern states had the highest rejection rate, and Florida exceeded the national average by 5 per cent. Major General Lewis B. Hershey, Director of Selective Service, told a committee of the House of Representatives of the United States on June 9, 1952, that "somewhat more than one third of all the persons examined for military service were disqualified for physical, mental, or moral reasons." The five leading physical defects among males were — in order of prevalence — eyes, teeth, feet, muscular and skeletal defects, and conditions of the heart and blood vessels. Mental and educational deficiencies also ranked high. Consult Figure 139 to see differences among the states in percentages of rejections for physical, mental, and moral reasons during nearly two years of the Korean War. All of these facts, plus the results of surveys made by federal and state health agencies, indicate that the Nation has a serious health problem. It seems evident that every community needs and should have a good health program as part of its plan for wise use of resources.

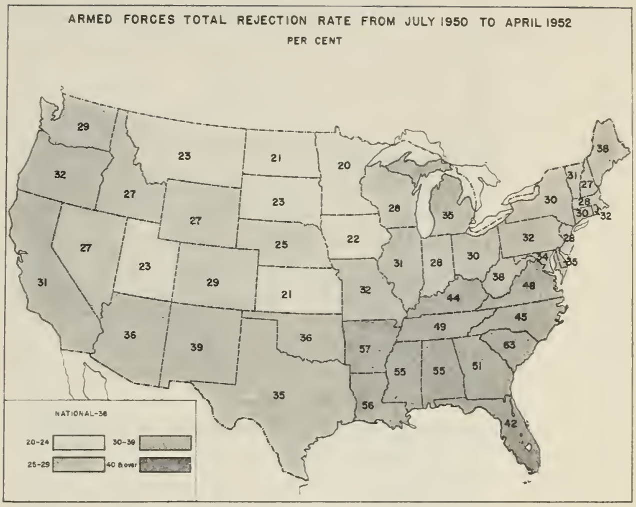


Figure 139

High death rates from certain leading causes such as heart diseases, cancer, and accidents present one kind of problem. Perhaps our greatest problem is chronic ill health. It affects the happiness, the working and earning power, and the levels of living of many people.

Florida, as usual, makes a somewhat better showing in Figure 139 than the rest of the Southeast, but rates less well than the Nation. Can you give reasons for these rankings? Florida shares the Nation's health problem. Much attention is being focussed on improving health in Florida and the Southeast, and considerable progress is being made. Some major aspects of Florida's health problem will be treated here.

Sanitation: Water Supply and Sewage Disposal. An adequate water supply is of great importance to people everywhere. People who live on farms are concerned mainly with keeping their water supply free from contamination. This is difficult if drinking water is drawn from shallow wells, and if homes have poor sanitary arrangements. As towns and cities acquire large populations, the problem of main-

SANITARY SEWERS AND SEWAGE TREATMENT IN FLORIDA

Year	*1940*	*1950*	*1953*
Total Population	1,897,414	2,771,305	3,168,000
Population Served by Public Sewers			
Number	740,000*	1,020,000*	1,243,000**
Per Cent	39	37	39
Population Also Served by Adequate Treatment of Sewage			
Number	72,000	205,900	427,116
Per Cent	10	20	34
Population Served by Inadequate or No Public Sewage System			
Number	1,825,414	2,523,100	2,740,884
Per Cent	90	91	91

*State Board of Health estimate.
**Based on replies to State Board of Health questionnaire.

Figure 140A

taining a good, pure water supply and adequate sewage disposal become more difficult. Less than one-half of Florida's people have available domestic water that has been treated in any way. Sewage disposal depends on a plentiful supply of water. Standards set by law must be upheld strictly by everyone if the menace of disease is to be reduced.

Figure 140A shows clearly that Florida is faced with a major sanitation problem. What portion of the population is served with inadequate sewage or has none at all? Have improvements kept pace with population growth?

Cities and towns are usually better served by sanitation facilities than rural areas. Figure 140B shows the rank of

SANITATION CHARACTERISTICS OF URBAN AREAS SERVED BY PUBLIC HEALTH AGENCIES, 1950

	Total Urban Population (Thous.)	Per Cent with Approved—				
		Water Supplies	*Sewage Systems*	*Sewage Treatment Plants*	*Refuse Collection*	*Refuse Disposal*
Florida	1,716	89	59	33	91	80
Alabama	1,528	90	75	36	82	79
Georgia	1,657	91	81	48	86	59
Mississippi	717	93	64	21	86	52
North Carolina	1,742	87	77	44	84	74
South Carolina	934	85	76	47	79	44
Tennessee	1,508	93	74	7	84	71
United States	84,227	94	86	58	89	68

Figure 140B

urban areas in some southern states and the Nation in several sanitation characteristics. What important facts do you discover from this table?

Demands for water are also growing because of expansion in industry and increasing irrigation. Reread the section in Chapter 9 called "Surface and Underground Water Problems." How are health and water problems connected? What are some of the solutions for water problems?

Nutrition. To be healthy, people must eat properly. A good diet means a balanced intake of the essential food elements, the chief sources of which are dairy products, eggs, lean meat, cereal, butter, fresh fruits, and vegetables. Dietary habits can be improved through education. Perhaps your own have changed since you studied about foods in school. Nearly everyone now has an opportunity to learn about proper diet. Education can also be applied to producing the more nourishing foods. Reread the section of Chapter 9 on "Hidden Hunger" to see why this is true. However, most of the preferred foods are high in cost. Increased buying power for lower income families is necessary if they are to be properly nourished.

It would seem as if farm people should have better food than town and city dwellers. Studies of diet reveal, however, that urban people are generally better fed. Can you think of any reasons for this fact?

Accidents. In 1953 there were in the United States 9,600,000 injuries from accidents and 95,000 deaths (more than three times the total for the entire Korean War). Put in another way, this means that for every 100,000 people in the Nation, 60 died from accidents. Far more injuries than deaths result from accidents, and annually hundreds of persons are wholly or partially disabled. In 1953 this happened to one out of every 16 persons in the United States. Many of these accidents could be prevented.

Motor vehicles are the leading instruments of accidental deaths and injuries. In 1952, 38,000 deaths (40 per cent of the total) resulted from such accidents and 1,350,000 injuries (14 per cent of the total).

In Florida in 1952 the accident death rate was 68 per 100,000 population (higher than that for the Nation). More than forty per cent of this rate was contributed by automobile accidents, which resulted in 922 deaths.

The Florida Industrial Commission lists accidents occurring to people while working. In 1940 there were 56,305 such accidents. By 1950 this number had increased to 102,884. Part of this increase is due to growth in Florida's population during the decade.

All of the evidence indicates that the toll of preventable death, ill-health, and injury from accidents goes on year after year in every community. Most people will agree that even one preventable death or injury by accident is one too many.

Find out what kinds of accidents occurred in your community during the past year. What kinds of safety programs do your school and community have? In what ways can you help to prevent accidents?

Facilities for Medical, Dental, and Hospital Care. Another measure of health conditions in Florida is the number of doctors, dentists, hospitals, and other facilities available. From Figure 142A determine how Florida ranks with the other

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*** EXPLORING FOR YOURSELF—How does your school and your community secure its water supply? Are there now or have there been any problems of sewage disposal or of water supply?

PHYSICIANS, DENTISTS, AND HOSPITAL BEDS

	Number of Persons per Physician	*Number of Persons per Dentist*	*Number of Persons per General Hospital Bed*	*Per Cent of Need Met by Existing General Hospital Beds*	*Per Cent of Need Met by Existing Mental Hospital Beds*
	1949	*1950*	*1950*	*1950*	*1950*
United States......	741	1777	333	64	55
Southeast					
Florida..........	813	2248	323	68	50
Alabama.........	1333	4336	476	47	27
Georgia..........	1042	3798	400	56	60
Mississippi.......	1449	4387	417	53	37
North Carolina...	1163	3760	333	60	54
South Carolina...	1333	4995	370	58	36
Tennessee........	1031	3118	400	56	47

Figure 142A

southeastern states and the United States. The numbers of doctors and dentists in Florida increased from 1940 to 1950. Because of rapid population growth, however, the number of persons per doctor and per dentist remained about the same.

As a general average, it is assumed that one doctor can care for a maximum of 1,000 persons, and a dentist, 2,000. One general hospital bed for 500 persons is considered the minimum necessary. Study Figures 142B and 142C to determine differences among counties. Are urban or rural counties better served (Figure 19B)? Do you see why doctors and dentists might prefer one to the other? People in some rural counties are not far from urban centers which they can reach by car.

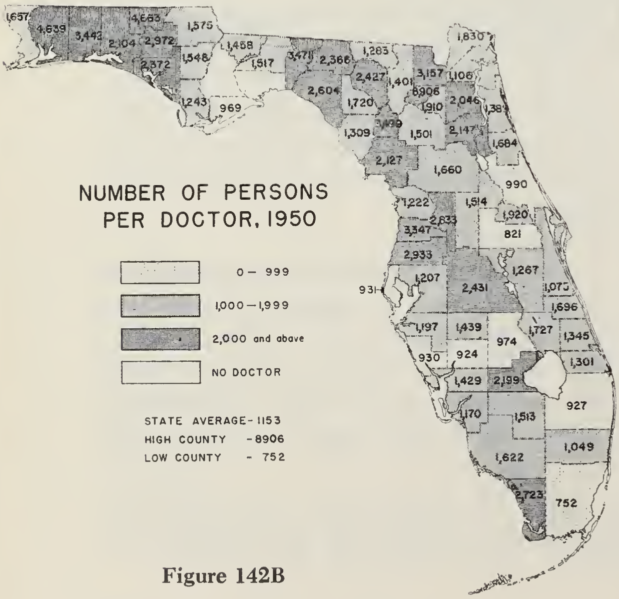

Figure 142B

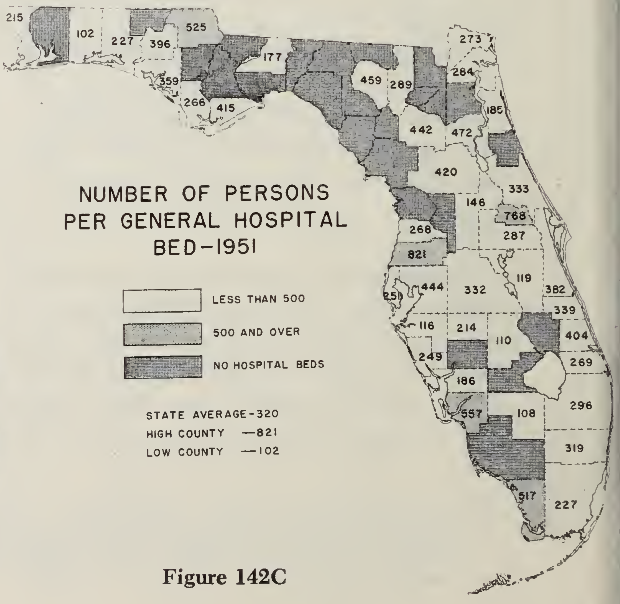

Figure 142C

However, not everyone has an automobile, and people cannot quickly get a doctor in an emergency.

Medical knowledge has increased, hospitals are better, and physicians, dentists, and nurses are better trained. There is still, however, a dearth of qualified physicians and dentists and available hospital facilities. The ability to pay for expensive medical care also depends on income.

Public Health Programs. Early in the history of this country public health became a concern of the state and national governments because health conditions depend not only on service to cure illness, but also on the prevention of disease. All public and private health agencies working together can do much to control communicable diseases, to provide better care for mothers and infants, to enforce sound food and drug laws and sanitary regulations, and to aid in health education. Much of this good work is being done by county, state, and federal agencies. In addition to the Florida State Board of Health with headquarters in Jacksonville, there are county health units in all except one county (St. Johns). Physicians and dentists work with these units as do public schools, Parent-Teacher Association groups, and service organizations.

The following brief outline will give some idea of the wide scope of the public health program involving the activities of many groups and organizations.

MAJOR PHASES OF WORK OF PUBLIC HEALTH PROGRAM

1. Maternal and preschool child welfare
   Examples: Immunization against childhood diseases, child guidance clinics for mothers.
2. Nutrition — advice and education concerning balanced diet and sources of essential food elements.
3. Preventable diseases
   Examples: Mobile TB X-ray units; hookworm prevention and treatment; venereal diseases; childhood diseases.
4. Sanitation
   Examples: Inspection of swimming pools, public eating places, dairies, water supply, sewage disposal, etc.
5. Vital statistics
   Examples: Records of number of cases of various diseases, death rates from various causes (including infant mortality rates), trends in increase and decrease of diseases, etc.
6. Safety and civilian defense
   Examples: Prevention of accidents through safety measures; plans and education for civilian defense.
7. Narcotics control
   (State Bureau of Narcotics cooperates with Federal Bureau of Narcotics, F.B.I., and state, county, and city law enforcement bodies.)
8. Dental health
   Mobile dental unit; dental clinics; cooperation of private dentists.
9. Laboratory work
   Examination of water, milk, food, etc. Research on infectious dis-, eases communicable diseases, etc.

The funds spent for public health were five times greater in 1950 than in 1940. Despite this fact, most of our county health units are temporarily housed in relatively poor quarters, and are inadequately equipped and understaffed. In 1950 only three county units in Florida had adequate modern buildings.

School health has received more and more attention through the cooperative efforts of the State Board of Health and the State Department of Education and of county health departments and county school systems. So large and varied has this school health program become that an entire book could be written about it. This program is concerned with such things as wise selection of school sites, school building, safe and well-equipped playgrounds, sewage disposal, and water supply. The school lunch, the safety of boys and girls, and the health of each child are also important. Schools now have health examinations and good instruction concerning health. Your teacher can help you make a study of these services and all the people who contribute to making the school health program a success.

Conclusion. Much remains to be done. Knowledge needs to be extended, facilities increased, and practices improved. The physical and mental health of Florida's people is a valuable resource and is the foundation of security and prosperity. Education must protect and strengthen this foundation.

HOUSING

All of the houses shown in Figures 145A to 145E were photographed in Florida. Have you seen houses in your community similar to any or all of these?

How Good Is Florida's Housing? From the map in Figure 146A, how do Florida counties compare in median value of homes occupied by their owners? What does median value mean?

Figure 146B shows values of owner-occupied homes in a different way. Find out what kinds of houses in your community are worth less than $3,000. Are there many such homes? How do the high and low counties compare in Figures 146A and 146B? Can you give any reasons from your study of other chapters in this book for the facts shown on these two maps?

Compare Florida with the United States and other southeastern states in all the items shown in Figure 146C. Does Florida rank as you expected? What reasons can you give?

In 1950 Florida had a total of 951,131 housing units. Only 9 per cent of all the urban units needed major repair (dilapidated); 19 per cent of the rural non-farm units and 27 per cent of the rural farm units, were in this condition. Can you see any connection between these facts and the distribution shown in Figure 147A? Can you also see a connection between the facts shown in Figures 146C and 147A and in Figure 26?

Figures 147B, 147C, 147D, and 148 show how Florida counties rank in several home conveniences. Do these maps show what

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*** EXPLORING FOR YOURSELF—You can learn a great deal about public health services from your local health officer. He can discuss with you the outline on health programs. You may also want to find out in detail what health conditions in your county are and how your school, health units, and various organizations in your community cooperate to solve health problems. Ask your teacher to secure for your use issues of the magazine *Florida Health Notes* for recent years. These issues will give you excellent material on most of the health problems of your state and county. For example:

June 1952	Work of the public health program Principal causes of death, by counties
Sept. 1952	Accidents in the home
June 1953	Discussion of various aspects of health program
Oct. 1953	School health
Nov. 1953	Hookworm

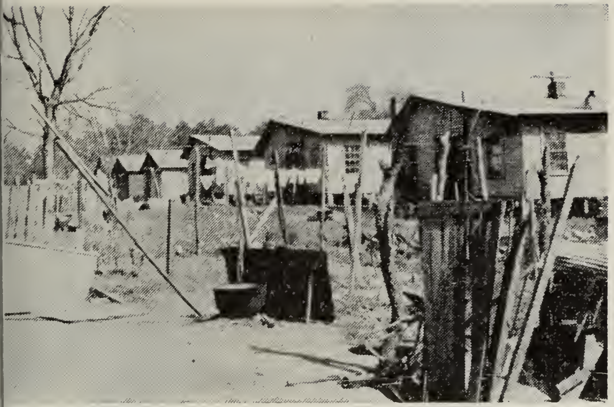

Figure 145A — Some Florida homes

you expected? Compare these maps with maps showing similar items in the old edition of this book (1946). How much improvement has taken place?

Your experiences in using the materials in this chapter should help you to check the following statements: "Low incomes, poor health and medical care, and poor housing and home equipment are found in the same places. They all are related to one another and to unwise use of human, natural, and social resources."

Some Typical Florida Houses. Refer again to Figures 145A to 145E. The homes in Figure 145A are typical of town and city slum areas. Such homes are also found

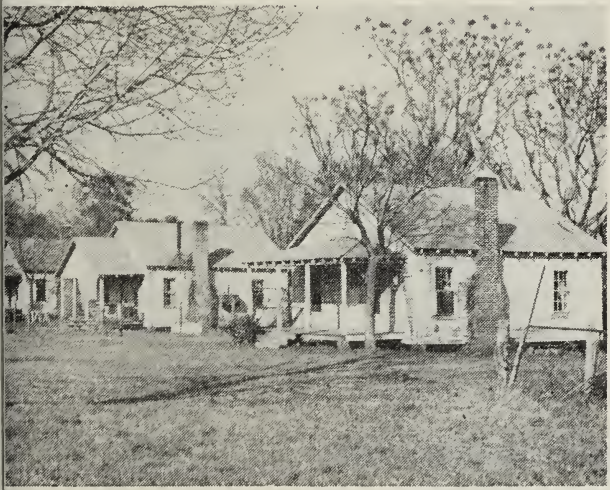

Figure 145B — Some Florida homes

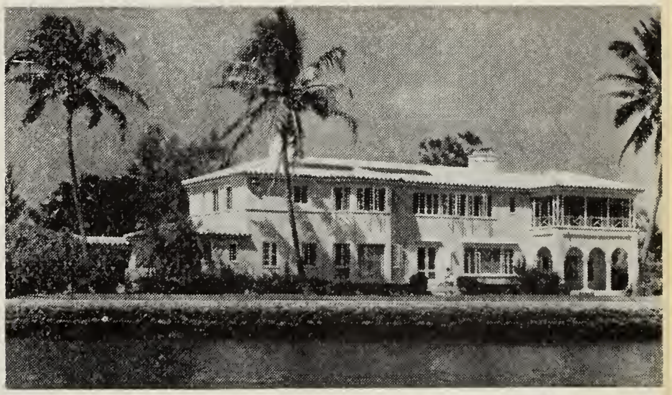

Figure 145D — A Florida home

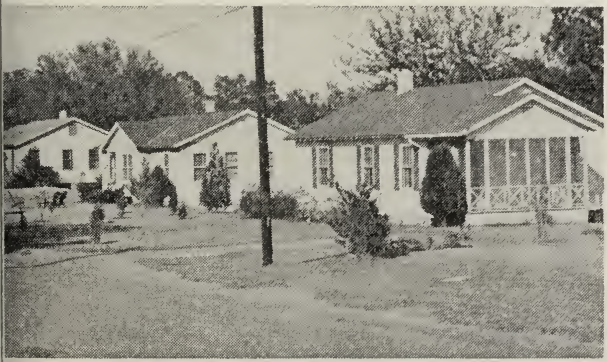

Figure 145C — Some Florida homes

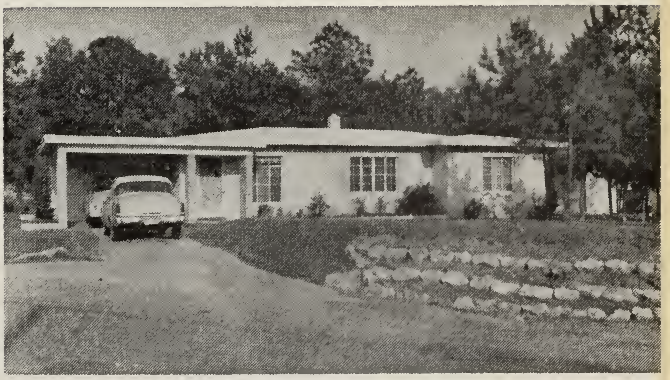

Figure 145E — A Florida home

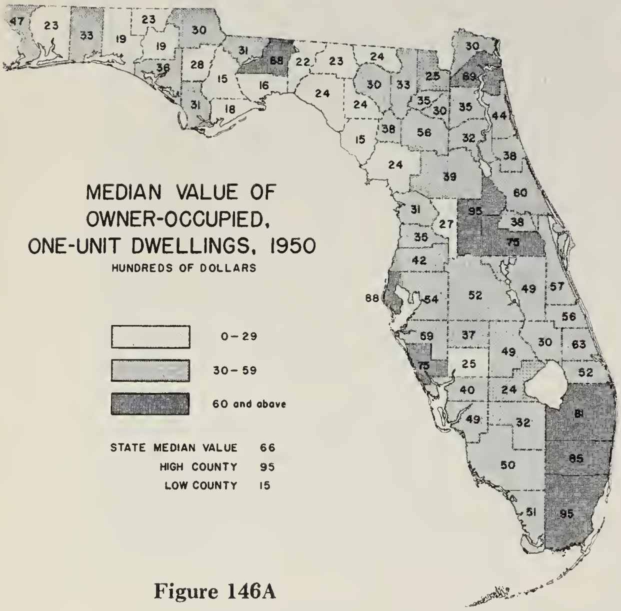

Figure 146A

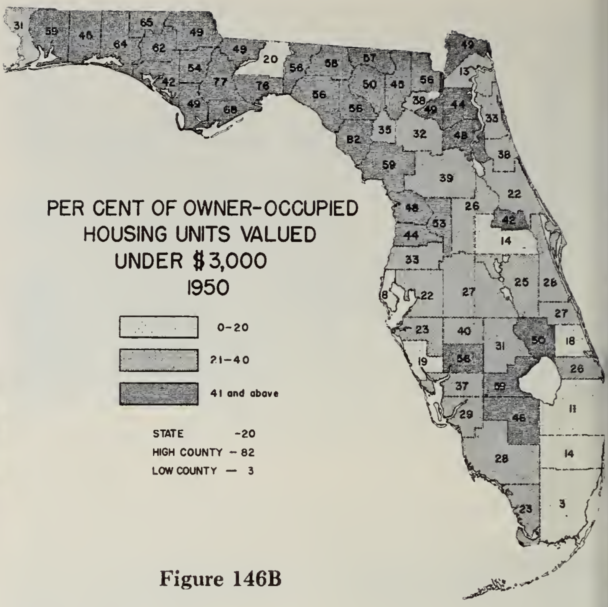

Figure 146B

in sawmilling and turpentining camps and on some tenant farms. These one to three-room shacks often have leaky roofs, thin outside walls of warped boards, no finished walls on the inside, and worn broken floors. Some have windows like those in Figure 145A; some have only wooden shutters. Light is provided at night by kerosene lamps or by a single bare electric light bulb in each room. Heat and cooking facilities are provided by smoky fireplaces or wood-burning stoves. This type of home lacks inside toilet and bathing facilities and sometimes has no outdoor toilet. Privies, which commonly accompany this type of home,

SOME HOUSING CHARACTERISTICS, 1950

	*Over-crowded**	*Needing Major Repairs***	*No Running Water*	*No Flush Toilets*	*No Toilets*	*No Electricity*	*No Refrigeration*	*No Radio*
United States	6	9	15	29	2	6	20	4
Southeast	13	21	23	43	6	16	18	10
Florida	8	12	8	22	3	9	6	8
Alabama	15	26	25	55	8	17	22	11
Georgia	13	24	22	50	6	17	15	10
Mississippi	17	31	31	66	10	29	28	15
N. Carolina	11	18	26	52	7	13	20	8
S. Carolina	14	24	25	53	8	19	20	12
Tennessee	12	20	37	52	5	14	18	7

*Having an average of more than 1.51 persons per room.
**Giving inadequate protection against the weather (called dilapidated in 1950 census).

Figure 146C

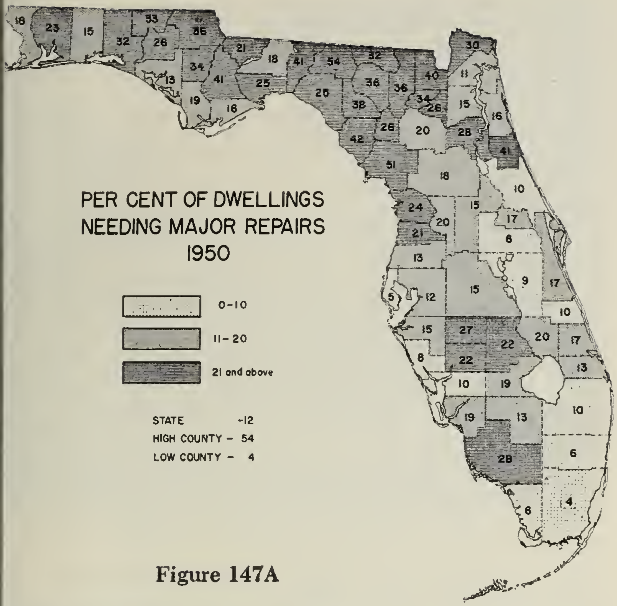

Figure 147A

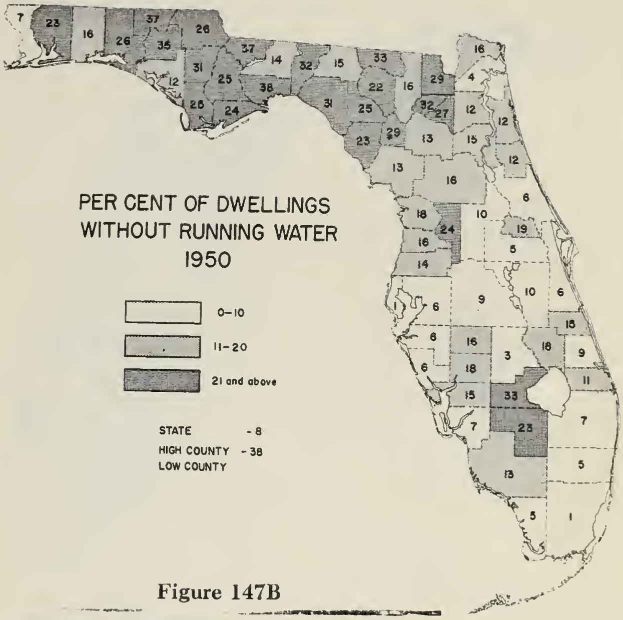

Figure 147B

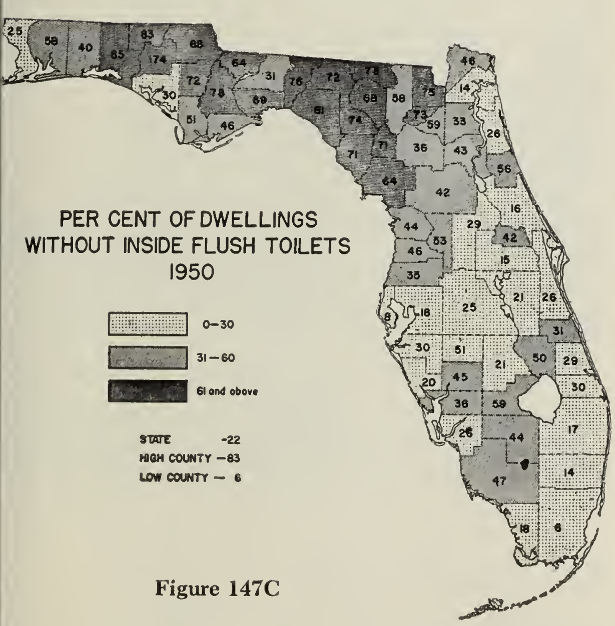

Figure 147C

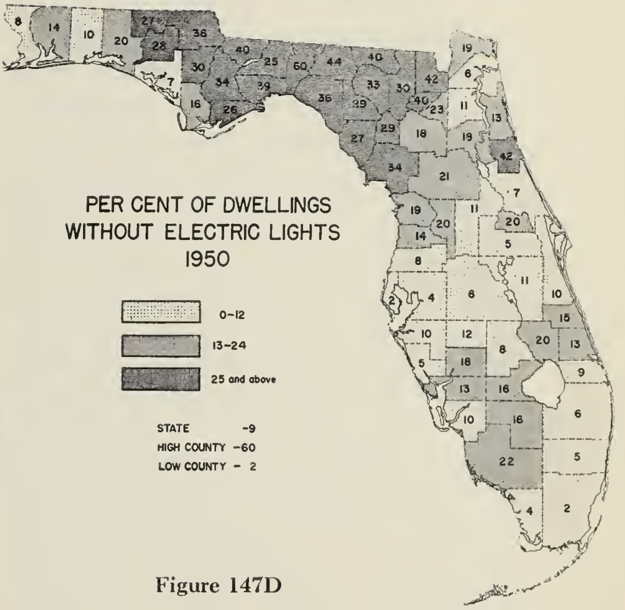

Figure 147D

are often open to flies and animals, and frequently afford no privacy. Dwellers in rural houses of this type often secure water of doubtful purity from a shallow well or from a stream or pond. The health of the families living in such a home is affected by the many disease germs which breed where there are no sewers, sanitary toilets, or a pure water supply. This type of home (Figure 145A) is considered "un-

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*** EXPLORING FOR YOURSELF—Does your community have or has it had in the past any residence areas so low in quality as to be a problem? Have any community housing projects been built? Have other means been used to solve the problem?

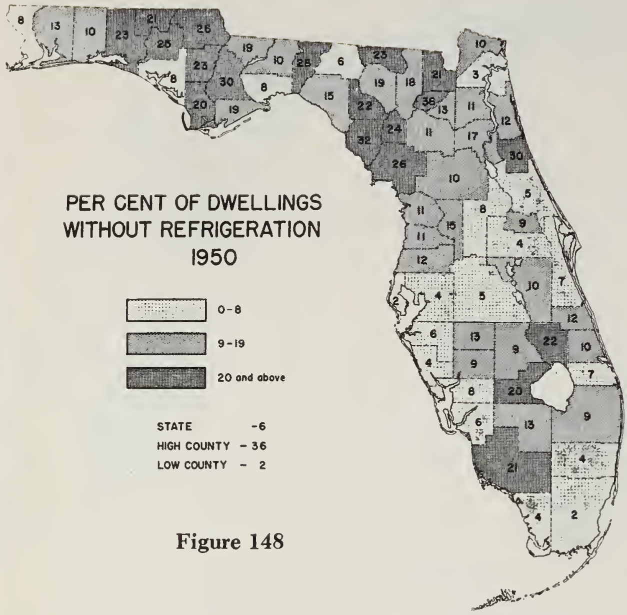

Figure 148

fit for use" rather than "needing major repairs," because of poor construction, present poor state of repair, and general unsanitary conditions.

There are many homes which appear better than the house in Figure 145A, but actually they also lack many things which constitute good housing. Figure 145B shows betters homes than Figure 145A, since there is extra room for cooking and eating quarters, thus leaving the major part of the building for bedroom space. However, more floor space and a slightly better roof are the only major advantages over Figure 145A. Moreover, these homes are often overcrowded, lack sanitary conveniences, are poorly lighted, and are inadequately heated. The two types of houses shown in Figures 145A and 145B have been common for several decades in Florida. Many, which have had few repairs over a period of years, are still occupied, but some have been remodeled or torn down to give place to such modern homes as pictured in Figures 145C and 145D. These changes have occurred in both rural and urban housing. The house in Figure 145E is typical of the finest in the State. The more expensive tourist areas, particularly the so-called "Gold Coast" of southeast Florida, has many homes of this kind.

These modern homes differ from each other principally in the quality of materials used in the construction and in the size and landscaping of the surrounding grounds. Most of them have adequate toilet and bathing facilities, electricity, refrigeration, and bedrooms separate from living quarters.

Using the map in Figure 146A again, decide in which counties you would expect to find large percentage of these homes. Many of the houses rented to tourists are of these better types. The map in Figure 96B shows the number of houses which are rented seasonally in each county. Where are the largest numbers of these homes found? How many are rented in your county?

World War II greatly increased the housing problem in many parts of the Nation where people were concentrated in military bases or in new defense industries. But construction of houses ceased except in these emergency situations. Many Florida communities, affected by both of these conditions, were still trying to catch up on housing in the early 1950's. Not only did population grow during the War, but it continued to grow afterward, thus increasing the demand for housing (Figure 15B).

Florida's Plans for Better Housing. Florida also has the problem common to most states of improving poor housing for people with low incomes. During the period of prosperity following World War II, many people had enough income to buy new homes or to improve older ones. Nearly all communities, however, have

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*** EXPLORING FOR YOURSELF—Study and take pictures of the types of rural and urban homes in your county. Do they resemble those in Figures 145A to 145E?

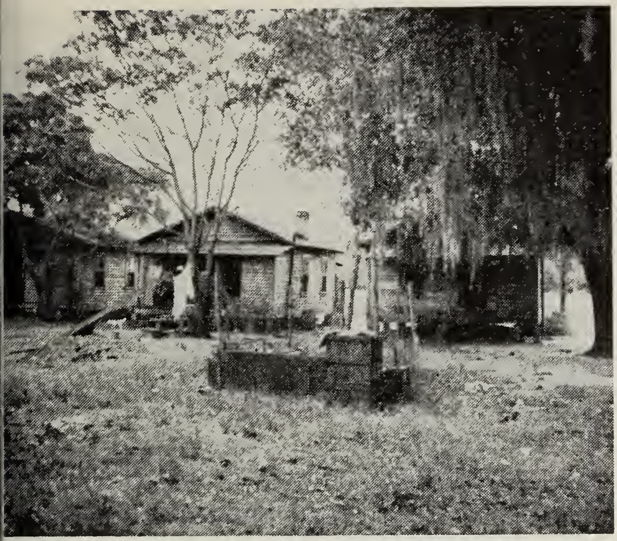

Figure 149A — Slum district before improvement

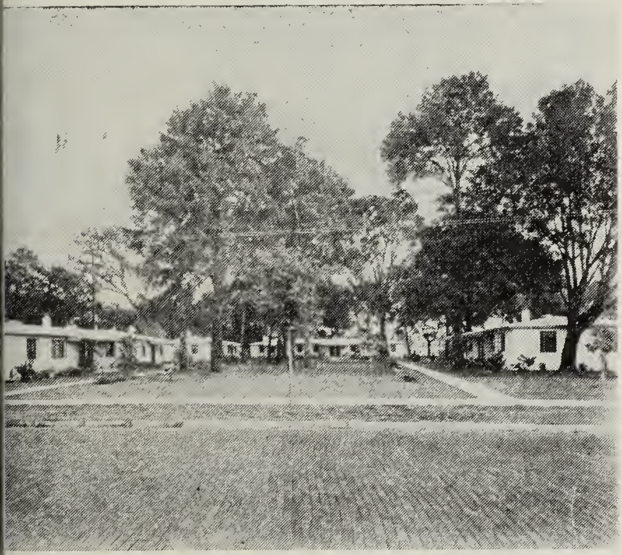

Figure 149B — Improved housing replacing slums above

some very poor residence areas that could be described as slums.

Figures 149A and 149B show how a town or city can substitute good housing for slums. Many larger communities now have some organization such as a Housing Committee or a Housing Authority or Administration to build and operate community housing. The federal government has made funds available through the National Housing Agency, later called the Housing and Home Finance Agency. It makes possible the improvement of community and individual housing conditions by rebuilding entire neighborhoods, making loans for housing improvements, and insuring mortgages. Many people in the low income groups have been provided with better housing by both public and private housing projects. Most of the community-sponsored improvement in housing has been made in urban centers. Most Florida cities have undertaken one or more projects. Perhaps you know of some. Nearly every Florida town and city also still has slum areas that should be replaced with better housing.

The problem of poor housing conditions in rural areas is harder to solve. Figures 26, 136, and 137 should help you to see this problem more clearly. Might the solutions to the problems of land use discussed in Chapter 9 also help to solve the rural housing problem?

In many parts of the United States the poorest living quarters are found in densely settled urban areas. In the Southeast, however, the rural farm people often have the least satisfactory homes. Perhaps you can tell in which parts of Florida this condition is most likely to exist. Do not forget about Florida's migratory labor when you think of poor housing. Educational programs on better rural housing are being carried on by county agricultural agents, home demonstration agents, churches, and rural public schools. During the period of prosperity following World War II, many improvements were made by farmers who owned their homes.

*** EXPLORING FOR YOURSELF—Ask your parents and other adults to tell you what happened to housing in your community during and after World War II. All communities did not have the same problems. A few communities had no problems. What was true of yours?

Perhaps you have noticed in your own county new buildings or such improvements as additional rooms built on, new roofs, screens, plumbing, and the like.

You should now be able to check the following statement: "Good housing for all people is very important because it contributes greatly to the comfort and health of human beings. Hence one of the major problems facing any society is the improvement of its housing."

RECREATION

Proper recreation, which means better use of leisure time, improves people's physical and mental health and increases their usefulness to society. A well-developend recreational program thus becomes necessary for the well-being of Florida's human resources.

What would be included in a well-balanced recreational program? Such a program would provide frequent opportunities for individuals of all ages to relax and forget their personal and business worries through healthful physical exercise and the pursuit of various activities that are outside the usual narrow routine of their lives. Provision should also be made for adequate vacation periods. A list of recreational activities would include outdoor sports of all types, hobbies, social activities, indoor games and entertainments, readings, and spectator sports.

This kind of program cannot be left to chance. Many of Florida's people, young and old, lack opportunities for proper recreation. Others fail to take advantage of those they have. Local communities and the State must assume responsibility for a well-rounded recreational program to meet the needs of all Floridians. It has been said that we have been so preoccupied with entertaining tourists that we have sometimes forgotten the recreational needs of our own people.

Outdoor Recreation. Nature has provided Floridians with unusual opportunities for a wholesome life out of doors all year. The natural conditions that attract tourists (Chaper 10) give the people of the State a wide variety of choice in outdoor pursuits. Hunting, fishing, camping, swimming, and boating are possible in all parts of the State. Nature lovers find a wide range of scenery and of plant and animal life. Wise seekers of outdoor pleasures know about the hazards of the environment and how to cope with them. In Florida these include poison ivy, redbugs and mosquitoes, poisonous snakes, stingrays, and sharks.

State and National Parks. While Florida has been intensely interested in the development of recreation for tourists, its own people have not been entirely forgotten. Since 1935 the Florida Park Service has established 24 state parks, 10 of which are in operation, 5 partially developed, and 9 undeveloped (Figure 41). In addition the Florida Park System includes 18 historic memorials and one scientific area on Fort George Island. Each unit of this system of parks and memorials has been chosen because it is representative of the special attractions of a certain area of the State (Figures 151A to 151D) or because it preserves something of historic interest. Some of the parks offer facilities for people of all ages to enjoy hiking, fishing, swimming, camping, boating, or just loafing. Some have cottages for family groups; others provide facilities for trailers or for auto-tents. All provide opportunity for Florida's people to get away from the usual routine and to

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*** EXPLORING FOR YOURSELF—

1. Ask your teacher if your school has the Sloan Foundation materials on housing. If not, perhaps your school could secure them from the University of Florida Curriculum Laboratory. They tell how homes have actually been improved with the aid of public schools. You might wish to study some of the same housing problems in your community.
2. What signs of improvement in housing have you noticed in your county? Why not take pictures of these changes to put on the bulletin board or in your notebook?

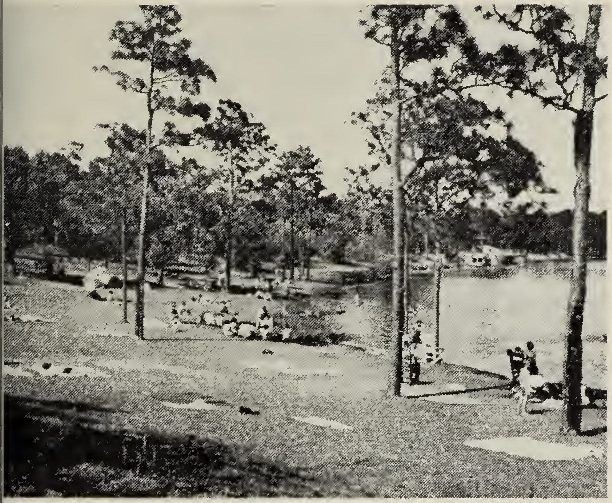

Figure 151A – Gold Head Branch State Park

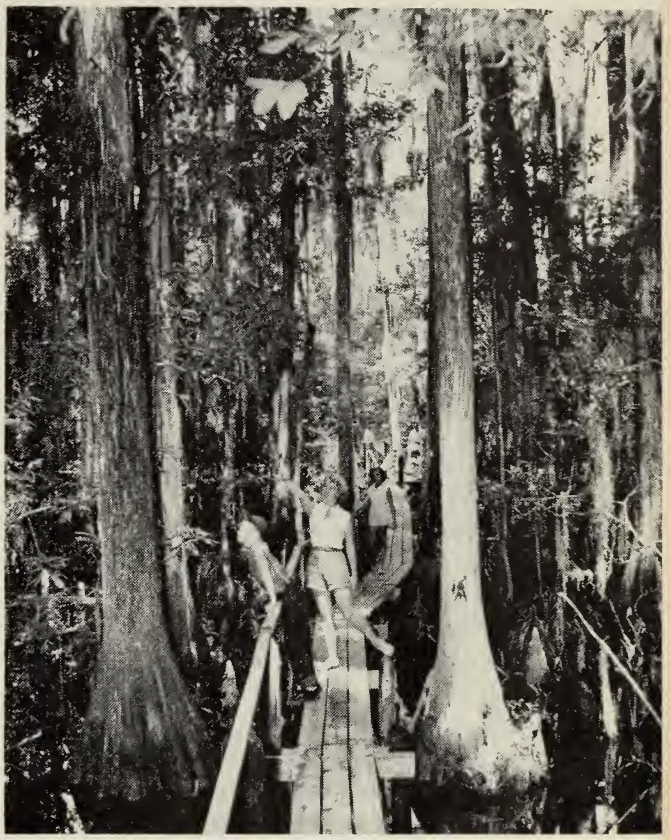

Figure 151C – Highlands Hammock State Park

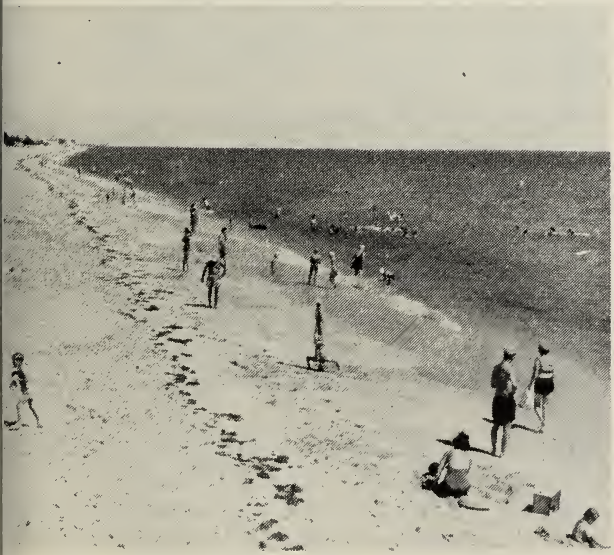

Figure 151B – Hugh Taylor Birch State Park

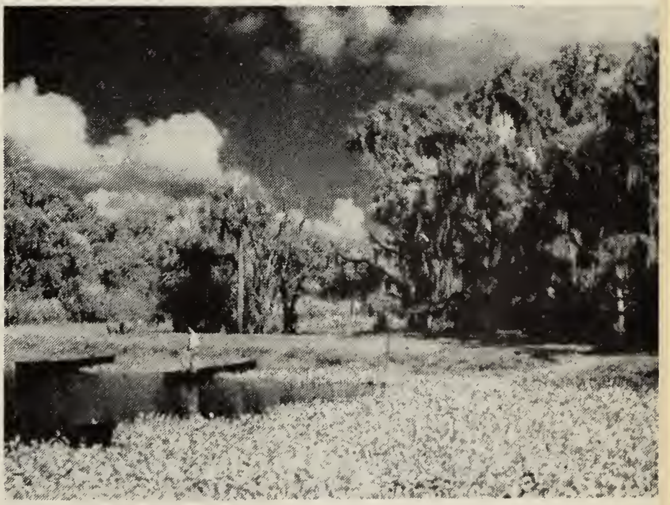

Figure 151D – Myakka River State Park

*** EXPLORING FOR YOURSELF—Make a study of recreational opportunities in your county or the town or city where you live.

enjoy some of the State's unspoiled areas of natural beauty. The facilities of these parks are being rapidly improved. They make available to Florida people inexpensive vacation and week-end recreation.

During the 12 months from July 1, 1952, to June 30, 1953, more than one million people visited Florida's state parks and historic memorials. No doubt some of these visitors were tourists, but many of them were Florida's own people in search of recreation. Is one of these parks or memorials near your home? What recreational opportunities does it offer? How much is it used?

Roadside picnic grounds have been developed at many points along Florida's highways by the State Road Department.

There are three national forests in Florida that offer recreational opportunities. The Juniper Springs Recreation Area in the Ocala National Forest (Figure 41) is an outstanding example of what the federal government has done for Florida's natives and visitors. The Everglades National Park (Figures 11A and 41) was treated briefly in Chapter 10, "Florida's Tourist Industry." This unique tropical area is visited by many Florida people as well as by visitors from outside the State.

Florida has many privately owned beauty spots and places of great recreational and educational value. One is Royal Palm State Park in south Florida. This park, sponsored and maintained by the Florida Federation of Women's Clubs, is distinctly tropical in vegetation and wild life.

Some Recreation Problems. From the description of Florida's vast outdoors, it might seem that the recreational standards of the State would be very high. There are some indications that such is not the case. Not all Floridians know about the available recreational opportunities. Many families have such low incomes that even a short trip to a nearby beach or picnic ground is impossible. Adequate recreation facilities need to be provided and made available to everyone. It is also necessary to educate the public to the importance and desirability of regular recreation activities.

As previously stated, the out-of-doors cannot take care of Florida s entire recreational program. People of all ages need and must be able to find some form of social recreation indoors. At one time the home was the center of social activity, but now that is less true. Authorities are agreed that inadequate recreational facilities and improper supervision of recreation are major factors in our present high rate of juvenile delinquency. It is more and more the responsibility of each community to provide wholesome recreation for all of its people. If the church, the school, or the community center do not provide desirable and properly supervised recreation, such questionable places as the roadside "juke joint," beer parlor, and night club will be patronized by people in search of pleasure.

Many counties and cities are showing concern for this problem. Playgrounds, swimming pools, and community centers have been or are being provided. Planned recreational programs with educational directors in charge are becoming more common. The universities and colleges of the State contribute to this effort by offering special education for recreation personnel.

Here is a check list to help you rate your own community on its provisions for recreation. After you have completed your rating, make a list of the problems

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*** EXPLORING FOR YOURSELF—Information concerning the Everglades National Park can be secured from the United States National Parks Service, "C" Street between 18th and 19th Streets, N.W., Washington 25, D. C.

that exist and study the possibilities and make suggestions for improvement. Since recreation affects you directly, you and your classmates should be greatly concerned about it. No doubt there are ways in which you can help to bring about improvements.

EDUCATION

What does the word education mean to you? Its meaning has changed from time to time. At present the broad aim of education is to help young people to live and work in a changing world. The passing on of accumulated knowledge is no longer considered an end in itself. Instead, an effort is made to help pupils to use knowledge in understanding and participating in the life of which they are a part. The need for this kind of education is clearly illustrated by the experiences of countries mentioned in Chapter 1.

Figure 154A shows in another way the need for education. The test mentioned on the map is used to find out how readily registrants absorb training and how well they are likely to perform their duties. Measurements are made of such aspects of learning as reading, simple arithmetic, and the ability to do well in the unfamiliar testing situation. How does Florida rank in the Southeast in Figure 154A? How do Florida and the Southeast rank in the Nation? Can you suggest any reasons for these rankings?

Learning takes place in a great many ways and goes on continuously not only in school, but everywhere. Before you ever attended school, you acquired habits, interests, and attitudes from your home life and from outside contacts. You had probably attended religious services, listened to the radio, seen motion pictures and read story books. Since it is impossible here to consider all of these educational forces, attention will be focused on the part played by Florida's public school system.

Florida's Public Schools. What part should Florida's public school system play in helping you to secure an education? How well are the public schools doing their job? And in turn, what obligations have you, now and in the future, to the community and state of which you are a citizen? These questions suggest that schools are a social resource designed to help and to improve human resources and that you have a responsibility for learning to be a good citizen.

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1. Is your local community careful to provide recreational opportunities for its own people as well as for its visitors?
2. Is recreation provided in your homes for both adults and children?
3. Does your community have a well-equipped and generously supported library?
4. Do your churches and schools have definite year-round recreational programs?
5. Do the young people of your community have club-rooms or places to meet and enjoy wholesome recreation outside of school hours? In the summer? Are these places well supervised?
6. Does any organization in your community sponsor soft-ball leagues, tennis tournaments, or similar forms of competitive sports?
7. Do you have a healthful place to swim?
8. Are there adequate parks, picnic grounds, or playgrounds in or near the community in which you live?
9. Does your community show interest in and promote Boy Scouts, Girl Scouts, 4-H Clubs, Young Men's and Women's Christian Associations, and other worthwhile organizations?
10. Are the people of your community willing to plan cooperatively for a better recreational program?

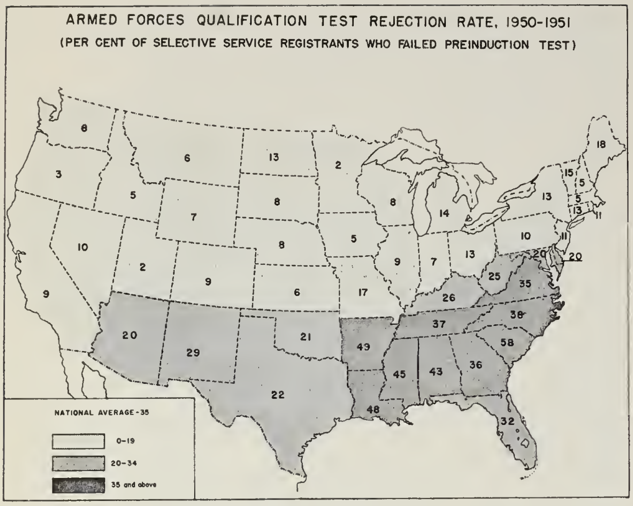
ARMED FORCES QUALIFICATION TEST REJECTION RATE, 1950-1951
(PER CENT OF SELECTIVE SERVICE REGISTRANTS WHO FAILED PREINDUCTION TEST)
8
3
6
13
2
18
5
15
5
13
13
11
7
8
8
14
10
10
8
5
9
7
13
20
25
35
2
9
6
17
26
9
38
37
20
21
49
58
29
45
43
36
22
48
32
NATIONAL AVERAGE-35
0-19
20-34
35 and above

Figure 154A

You are in school today as part of Florida's school population of more than 640,000. If you attend a public school, the taxpayers of your State spent in the school year of 1949-1950 an average of $181 for your education. The total investment in school buildings, grounds, and equipment up to that time was $145,398,000. That means that in school plants there was an average investment of $350 per pupil. Refer to Figure 154B to see how these financial investments in Florida compare to those in the other Southeastern states and in the Nation. What have you already learned that enables you to understand the differences shown?

You have seen how Florida ranks in housing and health. Does the State hold the same or a different ranking in the amount of money spent for education? Why is it important to know this?

Financial Differences Among Florida Counties. One important educational difference among counties is in the salaries paid to teachers (Figure 155A). In which of the three salary groups is your county? Do you think living costs for teachers are the same in all counties?

Study Figures 155B and 155C to see other differences among Florida counties in their ability to pay for education. What have you learned from your study of Florida that helps you to understand these differences? How does your county rate? Do you know why? Do you see any con-

FINANCIAL INVESTMENTS IN EDUCATION SCHOOL YEAR 1949-1950*

	*Expenditure per Pupil***	*Value of School Plant per Pupil*	*Expenditure per Capita Total Population*	*Average Annual Salary, Teachers, Supervisors, Principals*
United States	$209	$511	$38	$3,010
Southeast	128	176	29	2,230
Florida	181	350	34	2,985
Alabama	117	162	26	2,111
Georgia	123	255	26	1,963
Mississippi	80	152	19	1,416
North Carolina	141	290	37	2,688
South Carolina	122	219	28	1,891
Tennessee	132	171	32	2,302

*Based on average daily attendance.
**Current expenditures less community services.

Figure 154B

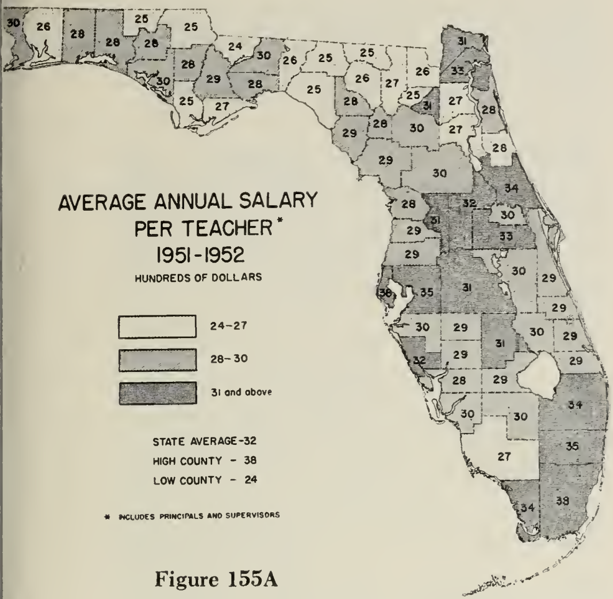

Figure 155A

nection between the facts shown in Figures 155A, 155B, and 155C, and those shown in Figures 15B, 16B, and 20B? Explain.

Figures 155B and 155C show how much money each county raises for its own educational expenses. The rest of the money spent on public schools in each county comes from state funds raised by state taxes. Your teacher can explain to you how Florida's plan called the Minimum Foundation Plan works.

Who pays the taxes that provide money for the state school fund? It comes from two sources: the people of Florida and the tourists who visit the State and spend money here. These visitors, you will recall, pay gas taxes, sales taxes, and the like. The counties with the most taxable wealth of different kinds pay more state taxes than those with less wealth. Figure 100B suggests that more sales tax money would reach the state treasury from some counties than from others. Is it now clear to you that the wealthier counties are helping to pay the costs of education in poorer counties? If this plan were not followed, schools in some counties would be very poor indeed. You may wonder if it is fair for one county to help pay for education in another. A few questions may help you to think about this problem. Find in Figure 15B the counties that lost people between 1940-1950. Do any of the people who leave these counties move into wealthier counties and become citizens? Are well-educated citizens more or less valuable than poorly educated ones? Perhaps you can think of

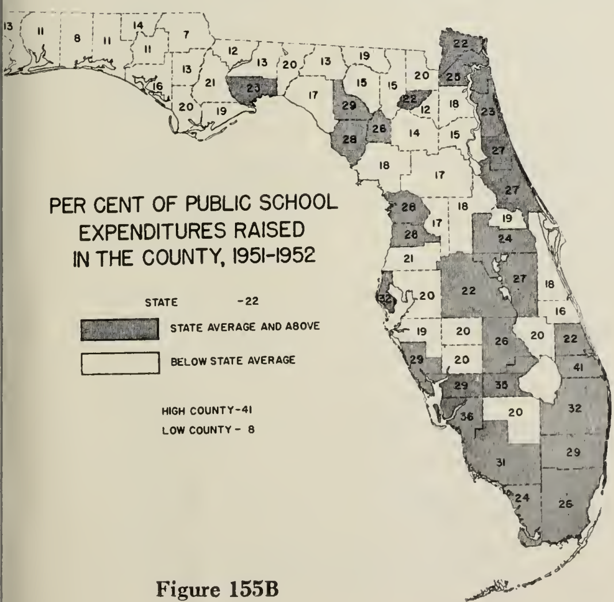

Figure 155B

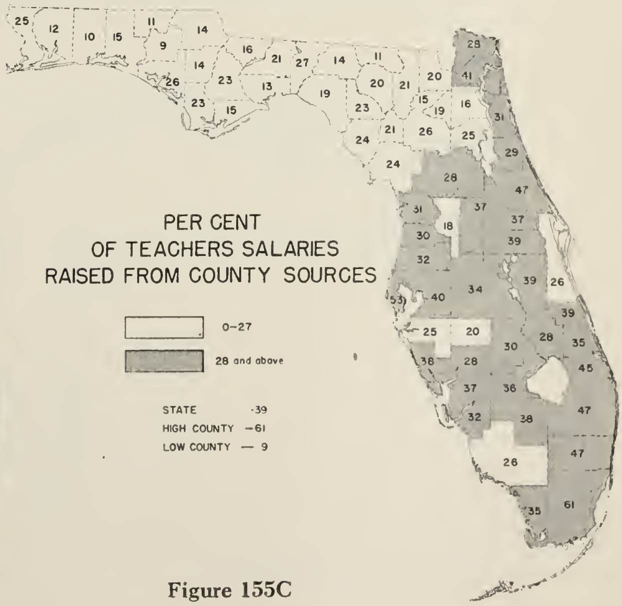

Figure 155C

other reasons why schools all over the State should receive financial assistance from state tax funds.

A Special Problem. Perhaps you live in a community that is growing rapidly in population. If so, you know that it is very difficult to get money enough for teachers, buildings, and equipment. By referring back to Figures 14 and 15A you will see that Florida has a greater problem of this kind than the Nation or the other states shown. You will see also that it is not a new problem.

This same problem of caring for a growing number of children of school age is made greater in many counties in another way. During certain months the children of tourists also enter Florida schools. Classes that begin at a reasonable size in the fall may become much too large during the winter months. Schools may even have to operate on double shifts.

This same crowded school condition also exists in communities that have growing populations resulting from large military installations or from unusual growth in manufacturing.

As a result of these facts about population, Florida is finding it necessary to spend more and more money to provide good schools.

Some Other Ways to Measure. Thus far the schools of the State have been evaluated on the basis of cost of operation alone. Another measure is the condition and quality of buildings, grounds, and equipment.

In Florida as in other states, buildings still range from dilapidated one-room shacks to the most modern school plants. Consolidation of schools is rapidly reducing the number of small schools. In recent years many fine new school plants have been erected for both white and Negro pupils throughout the State. In general there is need for much greater expenditure on schools and equipment, especially for Negroes. As you know, some counties have gained population so rapidly that new schools are necessary. Other counties have been too poor to meet their educational needs.

It is impossible to lay down exact requirements for the school plant, as needs vary considerably from one community

SOME GENERAL CHARACTERISTICS OF A GOOD SCHOOL

Site	*Building and Equipment*
1. Should be large enough for adequate playgrounds 2. Should have equipment for outdoor games 3. Should be clean and attractive	1. One-story building preferable 2. Fire protection (construction, escapes, extinguishers, drills, removal of hazards) 3. Adequate provision for lighting, heating, and ventilation 4. Sanitary drinking fountains 5. Sanitary bathrooms 6. First-aid room and equipment 7. Comfortable desks 8. Rooms not over-crowded 9. Adequate library 10. Laboratory facilities 11. Assembly room large enough for all 12. Sanitary lunchroom 13. Gymnasium, or equivalent 14. Adequate supply of good textbooks 15. Clean, neat building

Figure 156

to another. However, the list of general characteristics in Figure 156 will help you in evaluating your own school.

How does your school measure up to these standards? Are there any ways in which you might help, such as in the maintenance of cleanliness and order in the buildings and on the grounds? Do you take the best possible care of textbooks and other materials provided by the public, remembering that waste here decreases the amount of money which might be used to purchase new library books or other facilities for your use? Are there ways in which the community might help? For example, your Parent-Teachers Association probably has helped your school in several ways.

Another important consideration in evaluating Florida's public schools is the length of the school term. The national average is 178 days; that in Florida is 180 days. Except for Mississippi, with 153 days, the other southeastern states range from 176 to 180 days.

Good schools cannnot exist without good teachers. In order to insure adequately educated teachers, Florida has set as a goal a four year college degree for every teacher. Study Figure 157A to see whether this goal had been reached in 1950. Florida now ranks in the top ten per cent among states in the Nation and well above the other southeastern states. As in most states, Florida teachers' salaries are based on the amount of education as well as on the number of years of service.

No matter how excellent the school program, how fine and well-equipped the school plant, or how well-educated the teachers, children cannot be educated unless they come to school. Figure 157B shows the proportion of children of various ages who are enrolled in school in Florida and in the Nation. Enrollment figures for all the southeastern states closely resemble those of Florida.

Such factors as enforcement of compulsory school laws and better bus transportation to and from school have increased school enrollment everywhere. Can you give some reasons for the higher percentage of enrollment for children 7-15 years of age than for those under 7 and over 15? How do the percentages for Negro and white children compare? Find out how your county ranks in enrollment. What can you and your family, the school, and the community do to increase enrollment?

COLLEGE EDUCATION OF FLORIDA TEACHERS, 1950

Years of College Completed	*White*		*Negro*	
	Number	*Per Cent*	*Number*	*Per Cent*
1–2.	225	1	61	1
3.	493	3	202	4
4.	11,535	70	4,159	83
5 or more. .	4,124	25	575	12

Figure 157A

PER CENT OF CHILDREN OF VARIOUS AGE GROUPS IN SCHOOL, 1950

Age Group	*United States*	*Florida Total*	*Florida White*	*Florida Non-White*
5– 6.	39	41	40	42
7–13.	96	96	97	96
14–15.	93	93	95	89
16–17.	74	72	75	64
18–19.	32	31	33	26
20–24.	13	12	14	8

Figure 157B

How regularly pupils attend school is also very important. In Florida in 1952-53 the average daily attendance was 94 per cent of the total, as compared to 92 per cent in 1940-1941. For the Nation as a whole, the average daily attendance in 1950-1951 was 91 per cent, and in 1940-1941, 86 per cent. How does your school rank in attendance? Can you give any reasons for this rank? Are you and your classmates doing your part in raising this rate and thereby taking full advantage of your educational opportunities? Could you do more?

Other Educational Agencies. Colleges, junior colleges, and universities in the State offer courses of instruction for two, three, four, or more years, and help to provide well-educated citizens, many of whom are also specially trained as lawyers, business men, farmers, and teachers. Study in most fields of knowledge except theology and medicine is provided in one or more of these institutions.

Many other agencies both public and private make valuable contributions to education. Prominent among these are private and church schools. The educational work of various departments of the state government should also be mentioned. Bulletins and other materials are provided by these agencies. You probably have seen the moving pictures on conservation brought to every part of the State by the Florida Forest Service and the Florida Park Service. Public libraries, museums, and picture galleries, if possessed by a community, are valuable educational aids.

Adult Education. You might be interested in knowing how many years of school were completed by the grownups in your State and Nation when they were children. Find in Figure 158 how Florida compares with the Nation and the Southeast in per cent of persons over 25 years of age who completed their education with the seventh and eighth grades. What per cent have not completed any years

NUMBER OF SCHOOL YEARS COMPLETED BY ALL PERSONS OVER 25 YEARS OF AGE, 1940 and 1950

School Years Completed	*United States*		*Southeast*		*Florida*		*Florida White*		*Florida Non-White*	
	1940	*1950*	*1940*	*1950*	*1940*	*1950*	*1940*	*1950*	*1940*	*1950*
None	4	3	6	4	4	3	1	1	10	8
Grade School										
1–4 years	10	8	21	17	15	11	7	6	36	32
5–6 years	11	9	18	15	14	11	10	8	24	21
7–8 years	35	27	22	22	25	20	28	22	17	17
High School										
1–3 years	15	17	13	17	15	17	18	19	6	10
4 years	14	20	10	13	15	21	20	24	2	5
College										
1–3 years	5	7	5	6	6	8	8	10	1	2
4 years or more	5	6	4	5	5	6	6	7	1	2
Not Reported	1	3	1	2	2	3	2	3	2	4
Median School Years Completed	8	9	7*	8*	8	10	9	11	5	6

* Estimated

Figure 158

of school? What per cent attended high school? College? How do percentages for white and Negro people compare?

What changes have taken place between 1940 and 1950 (Figure 158)? Do these figures suggest that your generation will be better or less well educated?

Among the southeastern states, Florida has the largest number of people who have completed high school, three years of college, and four or more years of college. On the other end of the scale, however, Florida ranks third in the Southeast in number of people who have completed no years of school. Both Mississippi and Tennesssee have fewer.

Most counties throughout the state are making provision for the further education of their adults. In addition to formal study in elementary and secondary school classes, literacy education, education for citizenship, shop work, public speaking, child care, and consumer education, opportunities for adults include forums, lectures, demonstrations, panel discussions, and club-organized study groups. The State Department of Education has been organized to offer help in all phases of the program. The General Extension Division, representing the three state universities of Florida, also provides many educational services for adults. Adult education can help people in many ways. Those with little schooling would profit from classes in fundamental skills and trades. Some workers wish additional instruction in their trade or wish to enter a new one. Other groups, such as teachers and business people, can profit from further instruction concerning their work. Do you think adults might profit from studying some of the things you have learned in this book? Why?

Education as a Social Resource. Reread near the beginning of this chapter the section called "Social Resources to Improve Living." Does your study of education help you to understand why schools on all levels may be thought of as a social resource? They serve society in two major ways: (1) They provide basic or general education needed by everybody. This work begins in the primary grades and continues into the colleges and universities. (2) Colleges and universities provide special education for lawyers, statesmen, businessmen, foresters, farmers, teachers, doctors, and many others.

Specialists such as these are necessary to do many of the social jobs you have read about in this book. Good farmers, foresters, and cattlemen will make better use of Florida's land than poor ones. Our society also needs citizens who are well enough informed to elect to office the people who will see that government performs wisely its functions in connection with using resources. Citizens also need to know enough to judge whether or not proposed programs for using resources are wise and should be supported. Has your study of this book helped you to become a better citizen? Explain.

*** EXPLORING FOR YOURSELF—You might like to find out in how many different ways organized adult education is going on in your community. Your teacher can suggest ways for you to do this. Is use made of the General Extension Division? If so, how?

Chapter 15

Florida Faces the Future

PROBLEMS AND POSSIBILITIES

As you have studied your state and your county, you have discovered that they, like all other parts of the world, have many problems to solve. These problems have to do with the use of human, natural, and social resources to create better ways of living for people. You should find it easy to name problems concerned with health, housing, incomes, education, farming, manufacturing, etc.

Your study should also have made you aware that some resources in Florida and in your county are more wisely used than others. You now realize that people can make choices in using resources and can

PERCENTAGE OF POPULATION OVER AGE 21
REGISTERED TO VOTE, 1950

1. Kansas	98%	17. Nevada	79%	33. North Carolina	69%
2. Ohio	95	18. Connecticut	77	34. Maine	69
3. Missouri	95	19. Massachusetts	77	35. New Mexico	66
4. Minnesota	94	20. Utah	77	36. Georgia	65
5. Nebraska	93	21. Vermont	76	37. Arizona	63
6. West Virginia	92	22. Idaho	74	38. New York	62
7. New Hampshire	89	23. Montana	73	39. Mississippi	60
8. Iowa	88	24. California	73	40. **FLORIDA**	59
9. Michigan	88	25. Kentucky	72	41. Louisiana	58
10. Illinois	87	26. Oklahoma	72	42. Maryland	57
11. Indiana	87	27. South Dakota	72	43. Tennessee	56
12. Wisconsin	85	28. Colorado	71	44. South Carolina	48
13. Delaware	85	29. New Jersey	71	45. Arkansas	47
14. Washington	84	30. Oregon	71	46. Alabama	40
15. Wyoming	84	31. Pennsylvania	70	47. Texas	35
16. North Dakota	82	32. Rhode Island	70	48. Virginia	33
				United States	73

Figure 160

explore the possibilities of new resources and of better uses of those already known.

Human beings have many material and cultural needs and wants. To provide these from the resources of any part of the earth over a long period of time requires thoughtful and wise use of resources. People must assume responsibility for doing the many difficult and sometimes tiresome tasks necessary to make resources work for man without injuring or destroying them. One way to assume responsibility is through interest in good government. You have learned that numerous county, state, and federal agencies play an important part in helping to use resources wisely. Laws affecting the use of resources are passed by the Florida Legislature. Therefore, people need to know what good government is and how it can influence the use of resources. Does Figure 160 suggest that all people old enough to vote take this responsibility seriously? How does Florida rank in this respect? How does its compare with other southeastern states? Do you think that most of the people registered to vote actually go to the polls?

PLANNING FOR THE FUTURE

If you are a good citizen, you believe in the future of your community and state; you think they are fine places in which to live and you want other people to think so. But a good citizen also faces difficulties and mistakes honestly and makes it his business to understand how his community and state may be improved through better use of both human and natural resources. You learned from Chapter 1 of this book that in the past nations have destroyed themselves by unwise use of resources. (Reread this chapter to see how it sounds to you now that you have almost completed your study of Florida.) The title of Chapter 1 and of this book, *Florida: Wealth or Waste?*, should now be a challenge to you to do everything in your power to see that your community and state correct their mistakes and develop *permanent* industries by practicing conservation of resources. Development of this permanent kind calls for wise planning by business men, various departments of the state government, by county and city officials, and by citizens everywhere.

In some instances it is not hard to see what needs to be done. Nearly everyone will agree that better public schools and colleges should be provided to help young people prepare themselves for life and also that better health measures are essential. These are ways of improving human resources. From your study you should be able to think of other ways. It is also clear that in some of our industries improved practices will result in conservation of natural resources and hence in better living for more people. For example, Florida can provide good livings for many more people if the large areas of land best suited to trees are kept in forest. Wood industries that are already important can grow and remain permanently large. The State will be richer if water conservation is practiced and the Everglades are prevented from burning. Your study of Florida should enable you to give many other examples.

Another way to increase opportunities in the State is through experimentation to find new products suited to Florida conditions and new uses for materials already present. Good examples of what has already been done are: the improvement of cattle and pastures; the development of new industries; and the discovery of many new uses of wood, which can be grown rapidly in Florida. Improved methods of handling and marketing products also result in new opportunities. No doubt you can think of many other examples similar to the ones given here.

All of these improved ways of using Florida resources call for expert knowledge. As you know, most counties have several well-informed experts such as the county agricultural agent, the home demonstration agent, and the county health doctor and nurse, who know how to help farmers and other people solve their problems. Various departments of the state government in Tallahassee also have such experts as foresters, geologists, and chemists, whose purpose is to help people of the State make better use of their resources. At each session of the Florida Legislature money is appropriated for education, for health programs, and for the operation of such state departments as the Forest and Park Service, Geological Survey, Department of Agriculture, and Game and Fresh Water Fish Commission. These departments can provide much valuable information and advice. They put out many bulletins, some of which you have read.

ATTRACTING NEW PEOPLE

As you know, the population of Florida is still growing. About 100,000 new people come into the State each year. Nobody knows exactly how many people can make their livings in Florida. That will depend on how well we use and maintain our resources. In order to develop new industries and make the most of what we have, more people probably will be needed to work in the State.

New people should not come, however, without knowing whether or not they can earn a good living after they get here. They should know what opportunities the State offers, what advantages there are for new jobs, and what handicaps must be met and overcome. People should not be encouraged to come unless they will make good citizens. New people should be willing to work hard and steadily to help build up permanent industries that will give them and other citizens good incomes. They should be interested in the welfare of the communities in which they live and should take an active part in improving education, recreation, and health facilities in these communities.

Experts on Florida. Through your study, you and your classmates have become specialists of a sort about Florida resources and their use. Suppose that your class has been appointed a committee to help twenty families from other states who want to come to Florida if they can find suitable work and satisfactory places to live. Plan how you could best help these families to settle successfully in your State and become prosperous and valuable citizens. You know that more people can live well only where resources are wisely used to support population.

A Florida Tour. You might begin by taking your families on a tour of your county and the State. The map in Figure 163 should help you in planning your tour of the State. It shows how Florida can be divided according to principal ways of earning a living into *work regions.*

Notice that three out of the five work region names on the map contain the words "forest industries," but that in only one region name does that kind of work come first. If you cannot explain why forest work is so widespread in the state or why it is of major importance in region number 2, refer back to Chapter 5, "Using Florida's Land for Forests."

Each of the work regions on the map in Figure 163 has some surplus products to sell either in local markets within the region or the State, or in more distant markets in the Southeast, the Nation, or even overseas. Make a list of these products for each region, indicating which are consumed chiefly within the state and which are shipped outside. Which regions have the most valuable products?

The more you know about your state, the better job you can do of showing it to the twenty families assigned to you. The Work Regions Map can serve as a means of reviewing what you have

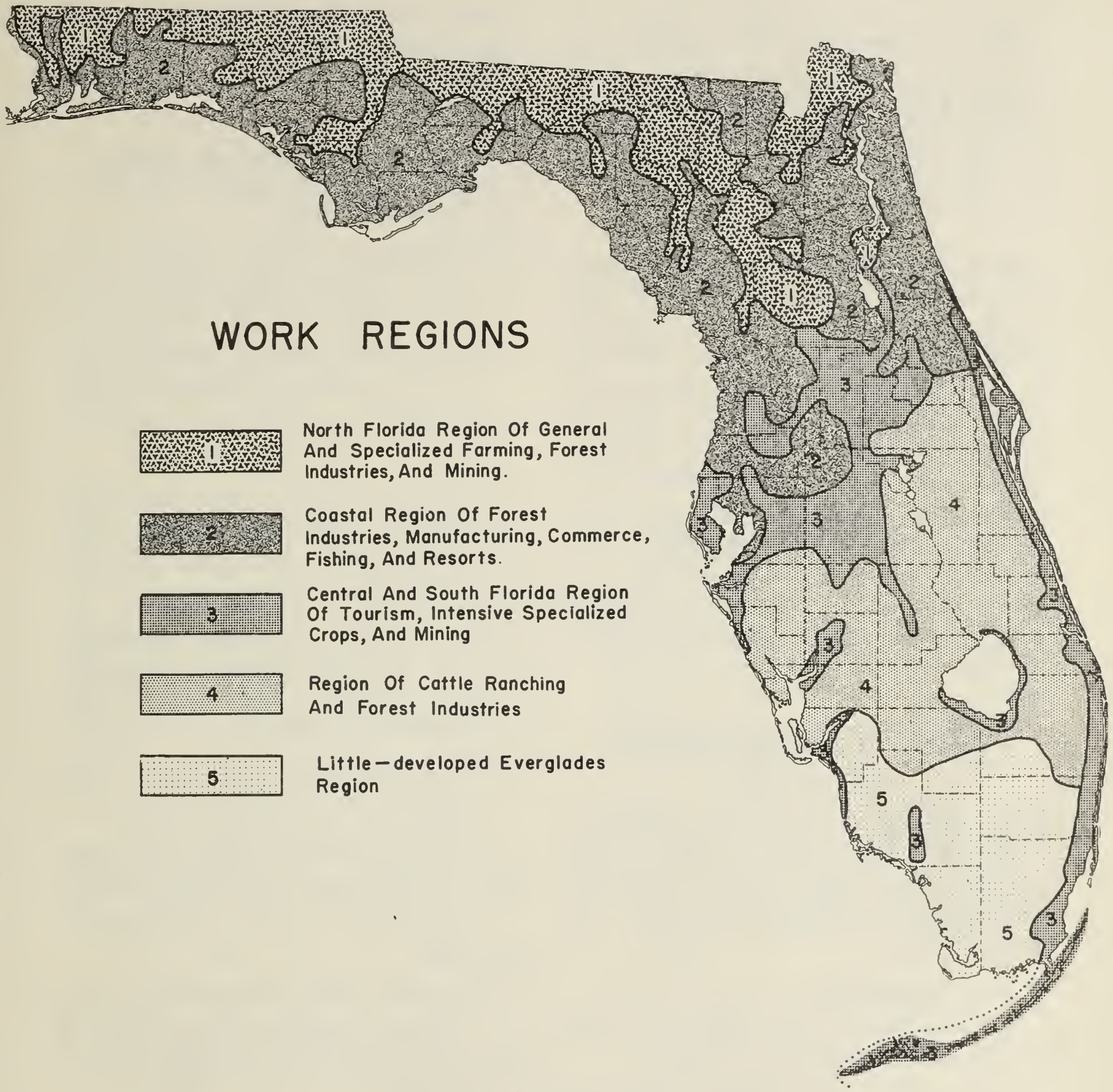
WORK REGIONS
1 North Florida Region Of General And Specialized Farming, Forest Industries, And Mining.
2 Coastal Region Of Forest Industries, Manufacturing, Commerce, Fishing, And Resorts.
3 Central And South Florida Region Of Tourism, Intensive Specialized Crops, And Mining
4 Region Of Cattle Ranching And Forest Industries
5 Little-developed Everglades Region
1
2
3
4
5

Figure 163

learned about the ways of using resources. What resource use problems do the people in each of the work regions face? Do they have similar or different problems? A good way to answer these questions is to study the maps, pictures, and tables in your book to remind you of important facts, ideas, and problems. You may want to reread parts of some chapters.

A Practice Program. Before you start working with your twenty families, you may want to try out some of your ideas in a program presented to a group of people in your own community. Parents of members of your class would no doubt be interested in some of the problems and possibilities you have thought about and in some of the interesting facts and ideas you have met in your study of Florida and your county. You might present them to the Parent-Teachers Association of your school or to one of the civic clubs in your community. Such materials as maps, graphs, and pictures from this book or from your own collection are useful in making presentations. You might first use this material in an assembly program in your school or present it to the pupils in some class other than your own, asking for their suggestions for improvement of your presentation.

Some Advantages and Some Handicaps. You will want to explain to your twenty families what resources are of great advantage to living and working in Florida. If these families are people who would make good citizens, they are likely to ask a great many questions. The following list will help you to be prepared to answer their questions. Add any other resources you think are important. You should be ready to tell all the ways in which each of these resources helps to provide work and to improve living in Florida.

SOME VALUABLE FLORIDA RESOURCES

1. A growing cosmopolitan population drawn from all parts of the United States and many foreign countries, composed of various racial and cultural groups.
2. Such attitudes as:
   a. Concern for the welfare of local community, state, and nation.
   b. Desire to use resources wisely to insure permanent industries to support people.
   c. Willingness to accept improved methods of work and to make needed changes.
   d. Interest in and willingness to assume responsibility for good government.
3. Opportunities for many people to earn sufficient income to provide good homes, food, clothing, and other necessities and comforts of living.
4. Many well-equipped communities with good schools, churches, recreational facilities, public utilities, and efficient government.
5. Natural resources used by people in living and in developing a number of successful industries:
   a. Subtropical climate with warm, sunny winters, especially south of the average January temperature line of 60 degrees F.; frost-free seasons from nine to twelve months, abundant rainfall of 50 inches or more.
   b. Level to gently rolling land with warm, well-drained sandy soils, heavier sandy clay loam soils, and fertile muck soils.
   c. A variety of beautiful subtropical and tropical vegetation including grasslands and pine, cypress, and hardwood forests.
   d. Numerous lakes and rivers; large supplies of underground water.
   e. A large peninsula with many miles of ocean coast; wide, sandy beaches; numerous islands; and many harbors.
   f. A great variety of game birds and animals, of fresh water fish, and of salt water fish and other sea resources.
   g. Large deposits of phosphate rock, fuller's earth, kaolin, limestone, and other minerals.
   h. Location nearer large markets of northern United States than our competitors in the Far West and near those of the Southeast.
6. Such wise conservation practices as:
   a. Providing better educational, recreational, and health facilities for the people of the State.

b. Improving the pastures on farms and ranches by planting better grasses.

c. Improving the quality of livestock and crops.

d. Reforesting cut-over, burned-over lands; protecting forests from fires.

e. Protecting wild life through enforcement of closed seasons and restrictions on size of catch.

f. Contour plowing on hilly land to prevent soil erosion.

g. Fertilization of land and increased crop yields per acre.

Every place on earth has handicaps as well as valuable resources or advantages. In order to help your families in every way possible, you must be honest and tell them also about Florida's handicaps in answering their questions. You should be able to show how each item in the following list presents difficulties to be solved in working and living in Florida.

SOME FLORIDA HANDICAPS

1. Such attitudes on the part of some peopeople as:
    - a. Too little concern for the welfare of community, state, and nation.
    - b. Too little thought for the future permanency of Florida industries through wise use of resources.
    - c. Too much concern with quick profits even at the expense of human welfare.
    - d. Unwillingness to make necessary and desirable changes.
    - e. Lack of interest in and unwillingness to assume responsibility for good government.
2. Mistreatment of natural resources which results in:
    - a. Small remaining stands of mature timber; large tracts of cut-over, burned-over, unproductive lands.
    - b. Decrease in supply of ground water; lowered water table; contaminated water supply.
    - c. Reduced supply of game and fish resources.
    - d. Reduced soil fertility and smaller crop yields per acre.
    - e. Poor quality of crops and animals.
    - f. Destruction of scenic beauty.
    - g. Too many low incomes and too much poverty.
    - h. Too many people without adequate educational, recreational, and health facilities.
3. The following natural handicaps that must be met and overcome wherever possible, because they affect earning a living, enjoying leisure, and maintaining good health:
    - a. Such climatic conditions as hot, humid summers; occasional severe freezes; occasional periods of drouth; rains that often come as heavy downpours; tropical hurricanes.
    - b. Much infertile, sandy soil.
    - c. Many areas of low, poorly drained marsh and swamp land.
    - d. Poor quality native grasses.
    - e. Few good harbors, numerous sandbars; silting of harbors.
    - f. Insect pests and disease carriers; poisonous snakes.
    - g. Lack of coal and iron; little water power; little oil at present.

Consulting Experts. Your twenty families should consult all of the county, state, and federal organizations and experts that can help them learn how to do the kinds of work they want to do in Florida. They should also talk to people who are successfully carrying on such work. If they wish to engage in citrus or truck farming, they should find out where in the State to settle, how much money is necessary to start such a farming venture, exactly what kind of land to buy, what equipment and methods to use, and what difficulties and handicaps are likely to be met. All of these problems will be harder to solve for people who come from outside southeastern United States and know little about farming or other work in Florida. Everywhere there are some people who will try to take advantage of new settlers by selling them worthless land at high prices or by leading them to believe that because the weather is warm in Florida all year, farmers harvest many crops continuously, and other such nonsense. Perhaps you know of cases in which prospective settlers have been so treated. If uninformed people undertake new kinds of work in new parts of the country without friendly help and sound advice, they are likely to fail and become stranded population. This is a waste of human resources and is unfortunate both for the State and for the settlers. Do you know of any groups in your part of the State who have failed in some undertaking such as a farming venture?

A LOOK AHEAD

Your study of Florida and planning for your twenty families should have made clear to you how important it is for citizens of Florida to be well informed about the people, the industries, and the natural resources of their State, how all of these resources may be wisely used, and what will be the results of such use. The people of Florida can build the kind of future that they want for their State. They can maintain their natural resources by sound practices and thus develop permanent industries, or they can destroy these resources and get rich quick for a short time, only to be poorer than ever at a later date. They can take a selfish point of view, or they can think of the welfare of all the people in the State over a long period of time. Developing state resources to the full will also increase Florida's contribution to the welfare of the Nation and that of the world.

You will recall that what people think and want is called public opinion. You and your classmates can perform a great service by appointing yourselves a permanent committee to help form sound public opinion that will demand wise community and state planning and legislation, as well as the application of scientific methods to the use of Florida's human, social, and natural resources.

The decision on "Florida: Wealth or Waste?" rests with you and all other Florida citizens.

APPENDIX

Table 1: Florida Area and Population, 1930-1950

Table 2: Employed Workers by Industries, 1950

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TABLE 1. FLORIDA AREA AND POPULATION, 1930-1950

County	POPULATION			*Gain or Loss*	*Land Area*	DENSITY PER SQUARE MILE		
	1930	*1940*	*1950*	*1940–50*	*Sq.Mi.*	*1930*	*1940*	*1950*
Alachua	34,365	38,607	57,026	18,419	892	38	43	64
Baker	6,273	6,510	6,313	–197	585	11	11	11
Bay	12,091	20,686	42,689	22,003	753	16	28	57
Bradford	9,405	8,717	11,457	2,740	293	32	30	39
Brevard	13,283	16,142	23,653	7,511	1,032	13	16	23
Broward	20,094	39,794	83,933	44,139	1,218	17	33	69
Calhoun	7,298	8,218	7,922	–296	557	14	15	14
Charlotte	4,013	3,663	4,286	623	705	6	5	6
Citrus	5,516	5,846	6,111	265	570	9	10	11
Clay	6,859	6,468	14,323	7,855	598	11	11	24
Collier	2,883	5,102	6,488	1,386	2,032	1	2	3
Columbia	14,638	16,859	18,216	1,357	786	19	21	23
Dade	142,955	267,739	495,084	227,345	2,054	71	130	241
De Soto	7,745	7,792	9,242	1,450	648	12	12	14
Dixie	6,419	7,018	3,928	–3,090	688	9	10	6
Duval	155,503	210,143	304,029	93,886	777	199	270	391
Escambia	53,594	74,667	112,706	38,039	657	82	113	172
Flagler	2,466	3,008	3,367	359	483	5	6	7
Franklin	6,283	5,991	5,814	–177	544	12	11	11
Gadsden	29,890	31,450	36,457	5,007	508	55	62	72
Gilchrist	4,137	4,250	3,499	–751	339	12	12	10
Glades	2,762	2,745	2,199	–546	746	4	4	3
Gulf	3,182	6,951	7,460	509	557	6	12	13
Hamilton	9,454	9,778	8,981	–797	514	18	19	17
Hardee	10,348	10,158	10,073	–85	630	16	16	16
Hendry	3,492	5,237	6,051	814	1,187	3	4	5
Hernando	4,948	5,641	6,693	1,052	488	10	12	14
Highlands	9,192	9,246	13,636	4,390	1,041	9	9	13
Hillsborough	153,519	180,148	249,894	69,746	1,040	148	173	240
Holmes	12,924	15,447	13,988	–1,459	483	27	32	29
Indian River	6,724	8,957	11,872	2,915	511	14	18	23
Jackson	31,969	34,428	34,645	217	942	34	36	37
Jefferson	13,408	12,032	10,413	–1,619	598	25	20	17
Lafayette	4,367	4,405	3,440	–965	543	8	8	6
Lake	23,161	27,255	36,340	9,085	996	22	27	36
Lee	14,990	17,488	23,404	5,916	786	18	22	30
Leon	23,476	31,646	51,590	19,944	685	33	46	75
Levy	12,456	12,550	10,637	–1,913	1,103	11	11	10
Liberty	4,067	3,752	3,182	–570	838	5	4	4
Madison	15,614	16,190	14,197	–1,993	702	20	23	20
Manatee	22,502	26,098	34,704	8,606	701	27	37	50
Marion	29,578	31,243	38,187	6,944	1,617	18	19	24
Martin	5,111	6,295	7,807	1,512	559	9	11	14
Monroe	13,624	14,078	29,957	15,879	994	12	14	30
Nassau	9,375	10,826	12,811	1,985	650	15	17	20
Okaloosa	9,897	12,900	27,533	14,633	944	10	14	29
Okeechobee	4,129	3,000	3,454	454	780	6	4	4
Orange	49,737	70,074	114,950	44,876	916	54	76	125
Osceola	10,699	10,119	11,406	1,287	1,325	8	8	9
Palm Beach	51,781	79,989	114,688	34,699	1,978	27	40	58
Pasco	10,574	13,981	20,529	6,548	751	14	19	27
Pinellas	62,149	91,852	159,249	67,397	264	212	348	603
Polk	72,291	86,665	123,997	37,332	1,861	38	47	67
Putnam	18,096	18,698	23,615	4,917	803	24	23	29
St. Johns	18,676	20,012	24,998	4,986	609	31	33	41
St. Lucie	7,057	11,871	20,180	8,309	588	12	20	34
Santa Rosa	14,083	16,085	18,554	2,469	1,024	14	16	18
Sarasota	12,440	16,106	28,827	12,721	586	24	28	49
Seminole	18,735	22,304	26,883	4,579	321	58	70	84
Sumter	10,644	11,041	11,330	289	561	18	20	20
Suwannee	15,731	17,073	16,986	–87	677	23	25	25
Taylor	13,136	11,565	10,416	–1,149	1,032	13	11	10
Union	7,428	7,094	8,906	1,812	240	30	30	37
Volusia	42,757	53,710	74,229	20,519	1,115	38	48	67
Wakulla	5,468	5,463	5,258	–205	614	9	9	9
Walton	14,576	14,246	14,725	479	1,046	13	14	14
Washington	12,180	12,302	11,888	–414	597	20	21	20
FLORIDA	1,468,211	1,897,414	2,771,305	873,891	54,262	27	35	51

TABLE 2. EMPLOYED WORKERS BY INDUSTRIES, 1950

	Per Cent of Workers Employed in Basic Industries						Per Cent of Workers Employed in Service Industries									
	Agriculture	*Forestry and Fishing*	*Mining*	*Construction*	*Manufacturing*	*Total Basic Industries*	*Transportation, Utilities, Communications*	*Wholesale and Retail Trade*	*Business and Repairs*	*Personal Service*	*Finance, Insurance, Real Estate*	*Professional*	*Public Administration*	*Entertainment and Recreation*	*Others*	*Total Service*
FLORIDA	12	1	1	9	11	34	8	24	3	12	4	8	5	2	*	66
Alachua	17	2	*	7	8	34	4	18	2	11	2	23	3	*	2	65
Baker	24	16	*	7	14	61	5	14	1	5	1	6	4	*	3	39
Bay	10	2	*	10	18	40	6	24	2	14	2	8	3	*	1	60
Bradford	28	4	4	11	8	55	5	12	2	8	1	6	8	*	*	42
Brevard	16	2	*	9	5	32	5	25	3	14	3	7	10	*	*	67
Broward	10	*	*	16	6	32	3	25	3	15	5	9	5	2	2	67
Calhoun	32	4	*	8	23	67	4	12	2	4	*	7	3	*	*	32
Charlotte	12	11	*	8	6	37	8	22	2	12	2	8	5	2	3	64
Citrus	15	8	4	9	6	42	5	20	2	14	1	6	4	2	4	58
Clay	9	4	1	7	15	36	5	15	2	10	2	8	18	2	3	65
Collier	20	8	1	8	23	60	4	14	2	10	2	3	2	2	2	41
Columbia	24	4	*	6	12	46	4	20	1	11	2	12	3	*	2	55
Dade	3	*	*	10	8	21	10	28	4	15	5	4	1	2	10	79
De Soto	22	*	*	6	16	44	3	20	2	9	2	13	3	*	3	55
Dixie	13	12	*	8	19	52	4	16	3	9	*	7	6	1	2	48
Duval	1	*	*	9	13	23	13	26	2	12	5	7	8	1	1	75
Escambia	3	1	*	6	14	24	7	21	2	12	3	8	18	1	2	74
Flagler	29	11	*	7	15	62	4	18	2	5	1	4	3	*	2	39
Franklin	2	35	*	5	9	51	5	19	*	11	2	7	4	*	*	48
Gadsden	49	*	1	5	10	65	2	9	1	7	1	11	2	*	1	34
Gilchrist	57	1	*	5	5	68	3	10	2	5	1	6	3	*	2	32
Glades	54	4	*	5	3	66	5	10	*	6	*	4	4	2	2	33
Gulf	4	3	*	6	38	51	6	15	1	12	1	6	3	2	1	47
Hamilton	42	8	*	3	16	69	2	10	1	7	*	5	2	*	2	29
Hardee	47	*	1	5	5	58	2	19	2	5	1	5	3	1	1	39

Hendry	16	*	*	8	32	56	3	15	2	8	1	5	4	*	4	42
Hernando	20	1	8	11	11	51	4	18	3	9	2	6	4	1	2	49
Highlands	28	*	*	6	6	40	6	23	3	10	2	8	4	1	2	59
Hillsborough	9	*	1	8	19	37	9	26	3	9	3	7	3	1	1	62
Holmes	50	1	*	5	15	71	3	10	1	3	*	5	2	*	3	27
Indian River	28	2	*	9	5	44	3	24	2	10	2	6	3	1	3	54
Jackson	42	*	*	6	8	56	3	15	1	8	1	9	3	*	2	42
Jefferson	46	4	*	5	10	65	3	12	1	9	*	5	3	*	1	34
Lafayette	57	3	*	4	11	75	2	10	1	*	*	5	4	*	*	22
Lake	28	*	*	10	10	48	3	23	2	10	2	6	2	2	2	52
Lee	17	4	*	9	6	36	3	24	3	13	3	7	3	1	2	59
Leon	8	*	*	11	7	26	5	20	2	13	3	18	13	*	*	74
Levy	28	9	1	6	21	65	4	12	1	7	*	5	3	*	1	33
Liberty	18	4	*	10	39	71	2	7	2	3	*	8	4	*	1	27
Madison	49	1	*	4	14	68	3	10	1	8	1	5	*	*	*	28
Manatee	26	1	*	9	10	46	4	21	3	10	2	6	2	1	2	51
Marion	24	*	1	7	12	44	6	22	2	12	2	7	3	*	1	55
Martin	22	3	*	13	3	41	8	13	2	16	8	5	4	1	2	59
Monroe	*	6	*	10	3	19	6	24	2	11	2	8	22	2	2	79
Nassau	10	6	*	7	36	59	6	15	1	7	1	6	3	1	1	41
Okaloosa	15	3	*	8	8	34	4	19	2	9	2	5	21	1	2	65
Okeechobee	27	3	*	16	11	57	6	17	3	5	1	7	4	1	*	44
Orange	12	4	*	9	9	34	3	28	3	13	5	9	3	1	2	67
Osceola	16	1	*	10	13	40	4	22	3	10	3	8	4	2	3	59
Palm Beach	23	*	*	9	4	36	5	23	2	15	4	6	3	2	1	61
Pasco	20	2	*	7	18	47	5	26	2	6	2	6	3	*	2	52
Pinellas	4	*	*	12	8	24	6	27	3	15	6	10	5	2	2	76
Polk	19	*	6	6	14	45	6	23	2	10	3	7	3	*	1	55
Putnam	19	3	1	6	22	51	5	18	2	11	2	6	3	1	1	49
St. Johns	17	4	*	6	6	33	12	19	3	15	2	10	4	2	2	68
St. Lucie	29	2	*	8	6	45	6	26	2	7	3	6	2	1	2	55
Santa Rosa	30	2	*	6	9	47	2	16	2	7	1	6	15	*	3	52
Sarasota	8	1	*	12	5	26	5	25	3	17	5	8	3	5	*	71
Seminole	30	1	*	5	6	42	8	25	2	8	2	6	2	2	2	57
Sumter	40	2	*	4	8	54	16	13	1	2	*	7	3	*	3	45
Suwannee	49	*	*	3	11	63	4	12	2	7	1	6	2	*	2	36
Taylor	9	5	*	6	34	54	4	17	2	12	1	6	3	*	1	46
Union	46	6	*	4	10	66	3	8	1	3	*	6	10	*	2	33
Volusia	8	*	*	11	7	26	7	25	3	17	4	9	4	2	2	73
Wakulla	11	16	*	14	12	53	4	17	2	10	*	6	5	2	1	47
Walton	25	2	*	9	15	51	4	16	1	7	1	7	7	*	5	48
Washington	34	*	*	9	16	59	5	13	1	5	*	3	3	*	5	38

* Less than ½ of 1 per cent.

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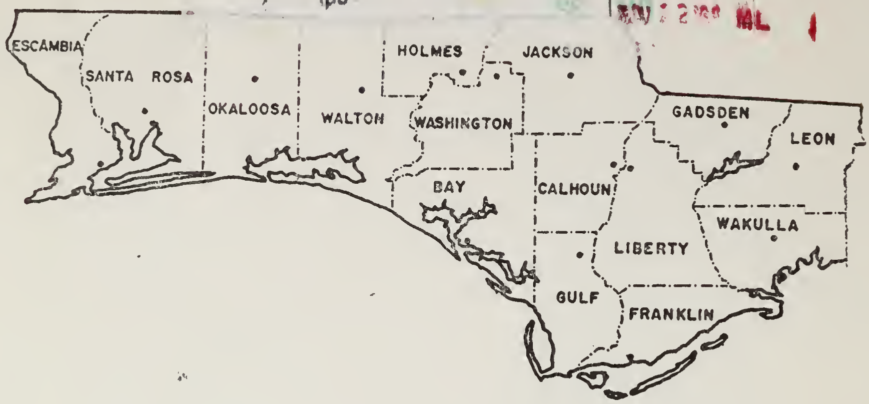

FLORIDA COUNTIES

DOTS (•) SHOW LOCATION OF COUNTY SEATS

ALACHUA, Gainesville
BAKER, Macclenny
BAY, Panama City
BRADFORD, Starke
BREVARD, Titusville
BROWARD, Fort Lauderdale
CALHOUN, Blountstown
CHARLOTTE, Punta Gorda
CITRUS, Inverness
CLAY, Green Cove Springs
COLLIER, Everglades
COLUMBIA, Lake City
DADE, Miami
DeSOTO, Arcadia
DIXIE, Cross City
DUVAL, Jacksonville
ESCAMBIA, Pensacola
FLAGLER, Bunnell
FRANKLIN, Apalachicola
GADSDEN, Quincy
GILCHRIST, Trenton
GLADES, Moorehaven
GULF, Wewahitchka
HAMILTON, Jasper
HARDEE, Wauchula
HENDRY, LaBelle
HERNANDO, Brooksville
HIGHLANDS, Sebring
HILLSBOROUGH, Tampa
HOLMES, Bonifay
INDIAN RIVER, Vero Beach
JACKSON, Marianna
JEFFERSON, Monticello
LAFAYETTE, Mayo
LAKE, Tavares
LEE, Fort Myers
LEON, Tallahassee
LEVY, Bronson
LIBERTY, Bristol
MADISON, Madison
MANATEE, Bradenton
MARION, Ocala
MARTIN, Stuart
MONROE, Key West
NASSAU, Fernandina
OKALOOSA, Crestview
OKEECHOBEE, Okeechobee
ORANGE, Orlando
OSCEOLA, Kissimmee
PALM BEACH, West Palm Beach
PASCO, Dade City
PINELLAS, Clearwater
POLK, Bartow
PUTNAM, Palatka
ST. JOHNS, St. Augustine
ST. LUCIE, Fort Pierce
SANTA ROSA, Milton
SARASOTA, Sarasota
SEMINOLE, Sanford
SUMTER, Bushnell
SUWANNEE, Live Oak
TAYLOR, Perry
UNION, Lake Butler
VOLUSIA, DeLand
WAKULLA, Crawfordville
WALTON, DeFuniak Springs
WASHINGTON, Chipley

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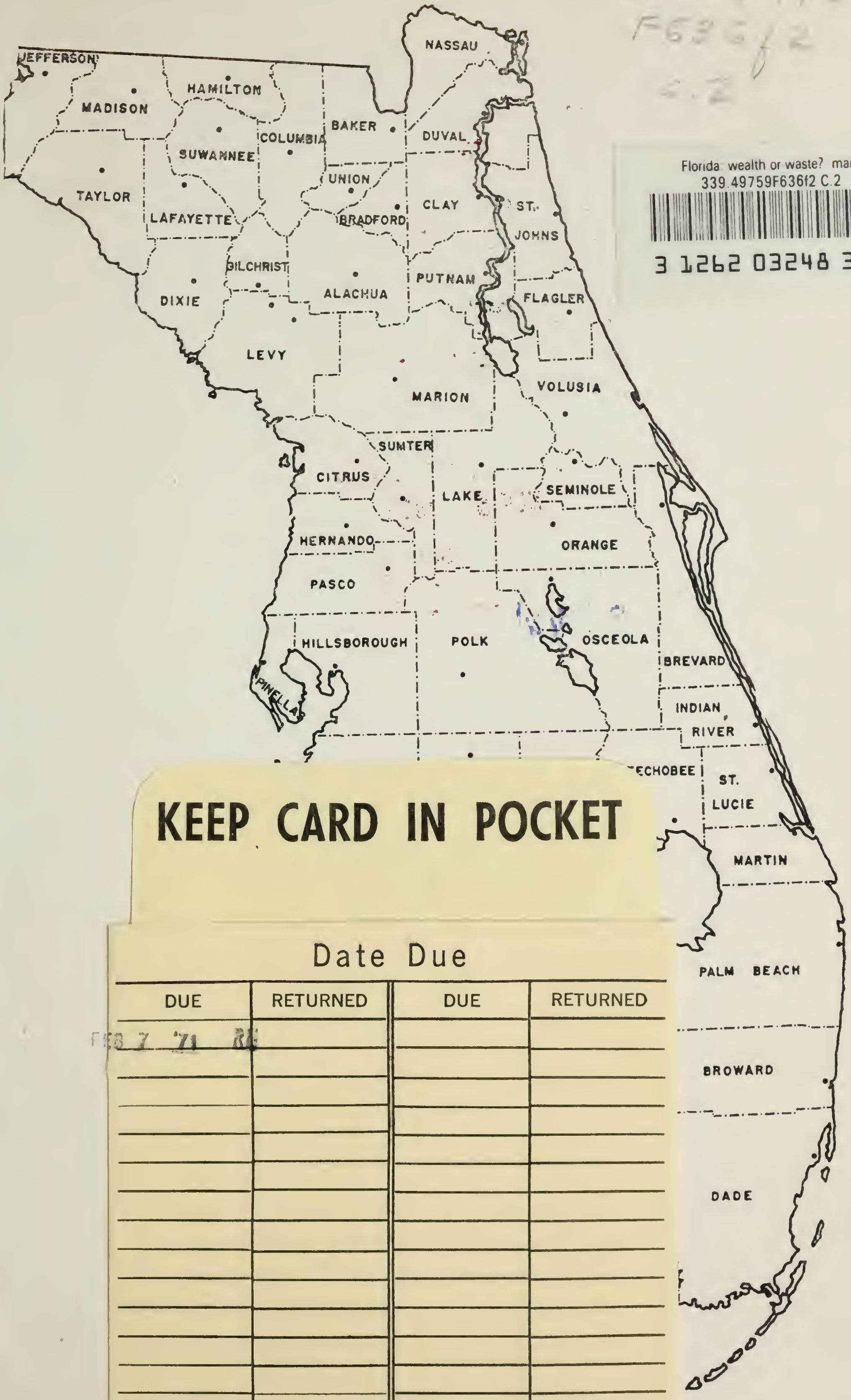

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Date Due

DUE	RETURNED	DUE	RETURNED
FEB 7 '71